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ABSTRACT

This study proposed that differential feedback affects change in principals' behavior as perceived by teachers. The population for the study consisted of 189 elementary schools of the Cleveland Catholic School System from which was drawn a sample of 40 schools. In addition to the general question posed, three more specific questions were asked: (1) Did the frequency of feedback affect the degree or amount of change in principals' behavior? (2) Did the quality (positive or negative) of feedback affect the degree or amount of change in principals' behavior? (3) What was the interaction between the frequency and the quality of feedback? Findings indicate that feedback does affect principals' behavior as perceived by teachers. In all instances, with the exception of "positive only" feedback of task assistance, there were either differences or changes in the principals' behaviors which were in excess of differences or changes in the control group. Negative weekly feedback, in the absence of positive feedback, is the most effective means of producing change in principals' behavior as perceived by teachers. (Author/WM)

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A STUDY INVESTIGATING THE DIFFERENTIAL EFFECTS OF FEEDBACK IN PRODUCING CHANGES IN PRINCIPALS' BEHAVIOR AS PERCEIVED BY TEACHERS

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by
Reverend Ronald H. Bojarski

Dissertation submitted to the Faculty of the Graduate School
of the University of Maryland in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
1974

EA 006 288

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ABSTRACT

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Title of Thesis: A Study Investigating the Differential Effects of Feedback in Producing Changes in Principals' Behavior as Perceived by Teachers

Reverend Ronald H. Bojarski, Doctor of Philosophy, 1974

Thesis directed by: Professor James Dudley

This study proposed that differential feedback affects change in principals' behavior as perceived by teachers. The general question posed was: What effect does feedback have on principals' behavior as perceived by teachers? With regard to feedback, three more specific questions were asked. First, did the frequency of feedback affect the degree or amount of change in principals' behavior? Second, did the quality (positive or negative) of feedback affect the degree or amount of change in principals' behavior? Lastly, what was the interaction between the frequency and quality of feedback?

The population for the study consisted in 189 elementary schools of the Cleveland Catholic School System from which was drawn a sample of 40 schools. The 40 schools became the subjects for the study. A pretest was administered to the teachers cooperating in the study, which was an adaptation of Jones' twelve statement instrument. The twelve statements were concerned with teachers' perceptions of their principals, with regard to task assistance and personal support. The

schools were randomly assigned to eight treatment groups: weekly--positive, negative, positive and negative, and control; and biweekly--positive, negative, positive and negative, and control. The teachers were asked to give three positive and three negative statements concerning how they perceived their principal, with regard to task assistance and personal support. The investigator collected, compiled, edited, and personally handed the statements to the principals. The statements the principal received depended on the treatment group to which the school was assigned. There was an interval of three weeks, after the treatment period in which no treatment took place. The following week a posttest was administered, which was the same type of instrument used for the pretest. The mean scores were derived from the pretest-posttest scores and the analysis of covariance was used to test the seven hypotheses.

The results of the analysis of covariance partially supported hypothesis 1 with regard to task assistance to teachers but showed that no positive feedback proved significant in personal support of teachers. The remaining six hypotheses were supported by the data both for task assistance and personal support of teachers.

This study sought the answer to four questions regarding the effects of feedback on principals' behavior as perceived by teachers. To obtain answers to these questions seven hypotheses were tested which concerned the effects of positive, negative, and frequency of feedback on principals' behavior in the areas of task assistance and personal support. The data analyses provided full support for six of the hypotheses and partial support for the seventh.

On the basis of these findings it can be concluded that feedback

does affect principals' behavior as perceived by teachers. In all instances, with the exception of "positive only" feedback of task assistance, there were either differences or changes in the principals' behavior which were in excess of differences or changes in the control group.

There were three specific questions raised. First, did the frequency of feedback affect the degree or amount of change in principals' behavior? The results of this study indicated that weekly feedback produced more change in principals' behavior than biweekly feedback. Second, did the quality (positive or negative) of feedback affect the degree or amount of change in principals' behavior? The findings of this study demonstrated that positive feedback was not effective in producing change in principals' behavior as perceived by teachers; while negative feedback was effective in producing change in principals' behavior. It was also shown that the interaction condition of no positive-negative feedback was effective in producing change in principals' behavior as perceived by teachers. Lastly, what was the interaction between the frequency and quality of feedback? This study has shown that the interaction of positive-frequencies of feedback was not effective in producing change in principals' behavior as perceived by teachers; while the interaction condition of negative-weekly feedback was effective in producing change in principals' behavior. The study also showed that the interaction between positive, negative, and frequencies of feedback was not effective in producing change in principals' behavior as perceived by teachers. From the results of the study, negative weekly feedback, in the absence of positive feedback, is the most effective means of producing change in principals' behavior as perceived by teachers.

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TABLE OF CONTENTS

		Page
ACKNOWLEDGMENTS		ii
LIST OF TABLES		v
LIST OF FIGURES		vii
Chapter		
I	STATEMENT OF THE PROBLEM	1
	A. Introduction	1
	B. Significance of the Study	1
	C. Statement of the Hypotheses	7
	D. Definition of Terms	8
	E. Limitations of the Study	9
	F. Plan of the Paper	9
II	REVIEW OF THE LITERATURE	11
	A. Introduction	11
	B. Communication Theory	11
	C. Subordinate-Superordinate Relationships	15
	D. Feedback and Related Research	19
	E. Summary of Reviewed Literature	25
III	RESEARCH PROCEDURES AND DESIGN	28
	A. Introduction	28
	B. Study Population and Sample	28
	C. Research Design	35
	D. Instrumentation	37
	E. Reliability Estimates	37
	F. Procedures	38
	Collecting Data	38
	Processing of Data	40
IV	ANALYSES AND FINDINGS	
	A. Introduction	46
	B. Task Assistance to Teachers	46
	Main Effects in the Analysis of Covariance	47

Chapter | Page

IV ANALYSES AND FINDINGS--continued
First-Order Interactions in Analysis of Covariance 51
Second-Order Interaction in Analysis of Covariance 53
C. Personal Support of Teachers 53
Main Effects in the Analysis of Covariance 53
First-Order Interaction in Analysis of Covariance 58
Second-Order Interaction in Analysis of Covariance 60

V CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS 65
A. Introduction 65
B. Analysis and Conclusions 65
Main Effects in Analysis of Covariance for Task Assistance 65
First-Order Interaction in Analysis of Covariance for Task Assistance 66
Second-Order Interaction in Analysis of Covariance for Task Assistance 68
Main Effects in the Analysis of Covariance for Personal Support 68
First-Order Interaction in Analysis of Covariance for Personal Support 69
Second-Order Interaction in Analysis of Covariance for Personal Support 70
Conclusions 71
C. Implications Drawn From Research 72
D. Recommendations for Further Research 74

Appendices

A STATEMENTS CONCERNING PRINCIPALS' BEHAVIOR 76

B TABLES REGARDING HOMOGENEITY OF REGRESSION TEST FOR TASK ASSISTANCE AND PERSONAL SUPPORT 80

BIBLIOGRAPHY 82

LIST OF TABLES

Table		Page
1	SUMMARY OF RELIGIOUS COMMUNITIES OF TEACHERS PARTICIPATING IN THE STUDY	32
2	SUMMARY OF SCHOOLS AND TEACHERS PARTICIPATING IN THE STUDY	33
3	SUMMARY OF ENROLLMENT FOR EACH SCHOOL PARTICIPATING IN THE STUDY	34
4	SUMMARY OF SCHOOLS IN TREATMENT GROUPS	36
5	SUMMARY OF SCHOOLS VISITED ON MONDAYS DURING THE STUDY	41
6	SUMMARY OF SCHOOLS VISITED ON TUESDAYS DURING THE STUDY	42
7	SUMMARY OF SCHOOLS VISITED ON WEDNESDAYS DURING THE STUDY	43
8	SUMMARY OF SCHOOLS VISITED ON THURSDAYS DURING THE STUDY	44
9	SUMMARY OF SCHOOLS VISITED ON FRIDAYS DURING THE STUDY	45
10	SUMMARY TABLE OF RAW AND ADJUSTED CRITERION MEANS AND VARIANCES--TASK ASSISTANCE	48
11	SUMMARY OF ANALYSIS OF COVARIANCE FOR THE MAIN AND INTERACTION EFFECTS FOR TASK ASSISTANCE	49
12	SUMMARY OF COMBINED RAW MEANS AND COMBINED ADJUSTED MEANS FOR TASK ASSISTANCE TO TEACHERS CONCERNING POSITIVE-NO POSITIVE, NEGATIVE-NO NEGATIVE, AND WEEKLY-BIWEEKLY FEEDBACK	50

Table		Page
13	SUMMARY OF COMBINED RAW MEANS AND COMBINED ADJUSTED MEANS FOR TASK ASSISTANCE TO TEACHERS; CONCERNING THE INTERACTIONS OF POSITIVE-NEGATIVE, POSITIVE-FREQUENCIES, AND NEGATIVE-FREQUENCIES	52
14	SUMMARY TABLE OF RAW AND ADJUSTED CRITERION MEANS AND VARIANCES--PERSONAL SUPPORT	56
15	SUMMARY OF ANALYSIS OF COVARIANCE FOR THE MAIN AND INTERACTIVE EFFECTS OF PERSONAL SUPPORT	57
16	SUMMARY OF COMBINED RAW MEANS AND COMBINED ADJUSTED MEANS FOR PERSONAL SUPPORT GIVEN TO TEACHERS; CONCERNING POSITIVE-NO POSITIVE, NEGATIVE-NO NEGATIVE, AND WEEKLY-BIWEEKLY FEEDBACK	59
17	SUMMARY OF COMBINED RAW MEANS AND COMBINED ADJUSTED MEANS FOR PERSONAL SUPPORT GIVEN TO TEACHERS; CONCERNING THE INTERACTIONS OF POSITIVE-NEGATIVE, POSITIVE-FREQUENCY INTERACTION, AND NEGATIVE-FREQUENCIES	61
Appendix B Table 1	HOMOGENEITY OF REGRESSION TEST OF TASK ASSISTANCE	81
Appendix B Table 2	HOMOGENEITY OF REGRESSION TEST OF PERSONAL SUPPORT	81

LIST OF FIGURES

Figure		Page
1	Summary of Geographical Location and Educational Statistics	29
2	Positive-Negative Interaction for Task Assistance to Teachers	54
3	Negative-Frequencies Interaction for Task Assistance to Teachers	55
4	Positive-Negative Interaction for Personal Support of Teachers	62
5	Negative-Frequencies Interaction for Personal Support of Teachers	63

CHAPTER I

STATEMENT OF THE PROBLEM

A. Introduction

Few studies have concerned themselves with principals' behavior as perceived by teachers. This study considered the effect feedback has on principals' behavior as perceived by teachers. The general question posed by the researcher was: What effect does feedback have on principals' behavior as perceived by teachers? With regard to feedback, three more specific questions were asked. First, did the frequency of feedback affect the degree or amount of change in the principals' behavior? Second, did the quality (positive or negative) of feedback affect the degree or amount of change in the principals' behavior? Lastly, what was the interaction between the frequency and quality of feedback?

B. Significance of the Study

Few, if any, dispute the fact that good teacher-principal relations are necessary for achieving the objectives and the goals of an educational system. The problem is how to establish and foster good teacher-principal relations. An important aspect in the solution to the problem may reside in communications. Supporting this view, Thayer

lists four organizational functions of communication.[1] They include:

1. The information function. We often want to become informed or inform others about organizational matters.

2. Command and instruction function. Communication is necessary to tell subordinates what to do (or how). Orders, directions, requests, and procedures function as command messages.

3. Influence and persuasion function. An administrator's effectiveness in fulfilling his function in the organization depends upon his susceptibility to advantageous persuasion as much as on his competence in persuading others.

4. Integrative function. Communication is essential to the integration and perpetuation of the psychological system of the individual. Maintenance of interpersonal relations and continuous integration of the system structure are also functions of organizational communication.

The individual's understanding of what the organization expects him to accomplish; how it plans to achieve its aims; and whether it considers his work satisfactory, relies heavily on communication and feedback. The alternative of poor communication and poor feedback results in; "unsatisfactory individual performance, misunderstandings, resignations, lack of concern for systemwide goals, and a general decline in unified behavior."[2]

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[1]Lee Thayer, Communication and Communication Systems in Organization, Management, and Interpersonal Relations (Homewood, Ill.: Richard D. Irwin, Inc., 1968), pp. 187-90.

[2]William B. Castetter, The Personnel Function in Educational Administration (New York: The Macmillan Co., 1971), p. 26.

The direction of organizational communication may be downward, upward, or horizontal. Downward communication usually parallels the line of responsibility and is essential to the continuity of organizational life. Some examples of downward communication are, official educational policies, programs, standards, definitions of assignments, and schedules of various kinds. Upward communication relates the information from the subordinate through the administrative hierarchy. Castetter lists two reasons why upward communication of information is important:

> 1. The first is to determine the extent to which the goals of the school system are being attained, the problems which arise in the conduct of the work of the school, and the corrective action that is needed.
>
> 2. The second is to determine whether organizational arrangements are conducive to personnel cooperation.[3]

A few examples of ways in which superordinates are able to receive information from upward communication are, workshops, grievance machinery, small group conferences, and committee work. Horizontal communication is necessary for coordinating projects between personnel at the same working level. In horizontal communication, coordination of organizational projects is brought about by planning, organizing, staffing, influencing, and controlling. Coordination is a conscious process of assembling and synchronizing differentiated activities so that they function harmoniously in the attainment of organizational objectives.[4]

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[3] Ibid.

[4] Ibid., pp. 26-27.

A review of current literature suggested that communication was vital for achieving the goals of an organization and that communication must exist downward, upward, and horizontally. In order to determine whether existing communication in organizations is accurately received, feedback must be present to relay evaluative information back to the sender. It is through the use of feedback that variations in performance are detected and organizations attempt to regulate their activities.[5]

This study considered the use of evaluative feedback in changing a principal's behavior as perceived by teachers. A favorable perception of the principal by the teachers is necessary in order to form a cohesive working group. Stogdill theorized that a member's role defines the responsibility and authority he is expected to exercise by virtue of the functions and status of his position, the demands made upon him by changing group operation, and the kind of person he is perceived to be.[6] When members in a group interact with each other, they establish expected norms of behavior and they also exert pressures on each other to conform to perceived norms.[7]

Getzels, Lipham, and Campbell arrived at a very similar conclusion. They found that an individual's behavior is produced by his reaction to

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[5]Theo Haimann and William Scott, Management in the Modern Organization (Boston: Houghton Mifflin Co., 1974), p. 3.

[6]Ralph M. Stogdill, Individual Behavior and Group Achievement (New York: Oxford University Press, 1959), p. 129.

[7]Ibid., p. 274.

his environment made up of patterns of expectations held for him. They conceived of a hierarchy of subordinate-superordinate relationships that coordinate roles and facilities.[8] Roles are defined in terms of expectations which determine for the individual what he should or should not do.[9]

The need-disposition patterns of a role incumbent control his reactions to his environment and to the expectations of the environment. A person is adjusted when his behavior is compatible with the expectations held for him. The expectations of a role and the institutional description of the role are perceived by the role incumbent in the light of his need-disposition patterns. To resolve this discrepancy, the role incumbent must either redefine his role in the light of the expectations others have for him or he must clarify his role so that others will be able to understand his position. In either case, he must receive evaluative feedback to achieve congruency.[10]

When an individual considers a set of expectations for a person holding a position, he evaluates that person's behavior against what he feels it should be and he views his own behavior with regard to the expectations he holds for his own position. Trying to acquire an accurate perception of one's own or another's behavior is a difficult thing to

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[8]Jacob W. Getzels, James M. Lipham, and Roald F. Campbell, Educational Administration as a Social Process (New York: Harper and Row Publishers, 1968), p. 133.

[9]Ibid., p. 61.

[10]Ibid., pp. 73-75.

achieve. Savage said, "Each administrator needs an understanding not only of the role expectations held for his position but also of the ways that others perceive his behavior."[11]

From the theories discussed, it is obvious that trying to acquire an accurate perception of another's behavior is difficult, yet very important for establishing good subordinate-superordinate relationships. This study used positive and negative feedback concerning the principal's behavior as a viable means of informing the principal of the teachers' perceptions. This approach is consistent with the theory of positive and negative feedback.

Immegart and Pilecki considered positive and negative feedback to be vital to a healthy system. Positive feedback reinforces the individual and points out a person's strengths and areas in which he is most efficient and relevant. This contributes to a person's efficiency and maintains the achievements already in existence. The danger with positive feedback is that in reinforcing the individual and his activities a restriction is placed on change or adaptation.[12]

Negative feedback questions the individuals action or direction. According to Immegart and Pilecki, negative feedback serves a vital function, since by its critical nature such feedback challenges both

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[11]William W. Savage, Interpersonal and Group Relations in Educational Administration (Glenview, Ill., Scott, Foresman and Co., 1968), p. 129.

[12]Glenn L. Immegart and Francis J. Pilecki, An Introduction to Systems for the Educational Administrator (Reading, Mass.: Addison-Wesley Publishing Co., 1973), p. 57.

the system and its actions. At least from the theoretical perspective, information which opposes the direction of a system action is maximally evaluative and is most conducive to adaptation and change. The work of information theorists and cyberneticians indicates that for many purposes negative information is in fact more valuable than positive information.[13] They considered frequent negative feedback to be potentially depressing for human beings and could have adverse effects on individual's behavior. It was felt that positive feedback would be necessary to lessen the possibility of adverse effects that could be produced by negative feedback alone.[14]

The above mentioned theories were used as a basis for this study which tested the effect evaluative feedback, as perceived by teachers concerning their principal's behavior, would have on changing a principal's behavior. This study also considered the effect frequency of feedback would have on changing principals' behavior as perceived by teachers.

C. Statement of the Hypotheses

1. Positive feedback produces no difference in principals' behavior as perceived by teachers as compared with no positive feedback.

2. Negative feedback produces a difference in principals' behavior as perceived by teachers as compared with no negative feedback.

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[13] Ibid., p. 60.

[14] Ibid.

3. Weekly feedback produces a difference in principals' behavior as perceived by teachers as compared with biweekly feedback.

4. There is an interaction between positive and negative feedback over frequencies in producing change in principals' behavior as perceived by teachers.

5. There is no interaction between positive and frequencies of feedback over negative feedback conditions in producing change in principals' behavior as perceived by teachers.

6. There is an interaction between negative and frequencies of feedback over positive feedback conditions in producing change in principals' behavior as perceived by teachers.

7. There is no interaction between positive, negative, and frequencies of feedback in producing change in principals' behavior as perceived by teachers.

D. Definition of Terms

For purposes of this study, the following definitions are presented:

Feedback. An error-correcting process in which information about the output of a system is returned as input so that the system can control its own performance.[15]

Positive Feedback. The reinforcement given to the system's action or direction.[16]

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[15]Richard A. Schmuck, Philip J. Runkel, Steven L. Saturen, Ronald T. Martel, and C. Brooklyn Derr, Handbook of Organizational Development in Schools (Washington, D. C.: National Press, 1972), p. 35.

[16]O. R. Young, "A Survey of General Systems Theory," General Systems (9, 1964), p. 72.

Negative Feedback. The opposition given to the system's action or direction.[17]

Weekly Feedback. Formal solicited feedback given to principals from teachers once a week.

Biweekly Feedback. Formal solicited feedback given to principals from teachers once every other week.

E. Limitations of the Study

Limitations imposed on the study resulted from specific use of defined variables, the Hawthorne effect and the population employed. The variables were defined in a specific manner and conclusions drawn from the study are limited to the way the variables were defined. Since the teachers and principals knew that they were involved in a research study, it is likely that the experiment created a Hawthorne effect which tends to improve the outcome beyond the specific effects of the intervention. The subjects were limited to schools drawn from the Cleveland Catholic School System and all generalizations of this study must be made in reference to that population.

F. Plan of the Paper

This research paper consists of five chapters. Chapter I presents a statement of the problem, the significance of the study and the

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[17]Ibid.

hypotheses to be tested. In addition, this chapter contains definitions of selected terms as well as limitations of the study.

Chapter II examines communication theory, subordinate-superordinate relationships in organizations and the need for understanding and clarifying perceptions of roles. In addition, the chapter reviews related research in the area of teacher-principal feedback and the use of positive, negative, and frequency of feedback.

Chapter III is divided into five sections. The first section contains the procedures undertaken in obtaining a random selection of subjects and a random assignment of subjects into treatment groups. The second section presents the research design. The third section discusses the instrument used in this study and how it was revised for the purposes of this study. The fourth section presents the reliability estimates and the fifth section reviews the procedures used in the collecting and processing of data.

Chapter IV presents the procedures used in analyzing the data as well as the findings of the study. All pertinent statistical data resulting from the analysis of covariance are summarized in tabular form.

The final chapter presents an analysis and the conclusions of the study. The statistical data are related to the hypotheses as stated in the first chapter. In addition, implications drawn from the research are presented. This chapter concludes with suggestions for further research.

CHAPTER II

REVIEW OF THE LITERATURE

A. Introduction

This study was concerned with differential effects of feedback in the light of teachers using their perceptions of their principals' behavior as feedback. The review of literature in this chapter seeks to find solutions to that problem by examining communication theory, the subordinate-superordinate relationship in organization and the need for understanding how each is perceived by the other in this relationship. In addition, this chapter also contains related research in the area of teacher-principal feedback and the use of positive, negative, and frequency of feedback. The conclusion of this chapter presents a summary of the reviewed theories and research.

B. Communication Theory

In the school organization, the information necessary for planning, decision making, or evaluating is widely dispersed and not even the most astute principal possesses all the information necessary to make decisions or formulate plans. Few would deny, if any, that communication between teachers and principals, considered in this study, is essential for the well being of any school.

There are numerous definitions of communications. Wilbur Schramm stated, "that through communication a person is trying to share an idea, information, or an attitude."[1] Leland Brown's definition for communication is "the transmission and interchange of facts, ideas, feelings, and courses of action."[2] Ted J. McLaughlin, Lawrence P. Blum, and David M. Robinson suggested that a definition for communication might be, "the mutual interchange of ideas by any effective means."[3] Each of these definitions of communication seem to imply one common feature as an attempt to transmit something to another.

Communication involves at least two parties, a sender and a receiver, and presumes that information and understanding has passed from the sender to the receiver. If a person understands what was intended, accurate communication has been achieved and if a person does not understand the message that the sender intended, then inaccurate communication has resulted. Haiman and Scott suggest that only through effective communication between the sender and the receiver can administrative policies and practices, ". . . be formulated and administered, misunderstandings ironed out, long-term plans achieved and activities coordinated

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[1]Wilbur Schramm, "How Communication Works," The Process and Effects of Mass Communication, ed. Wilbur Schramm (Urbana, Ill.: University Press, 1954), p. 3.

[2]Leland Brown, Communicating Facts and Ideas in Business (Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1961), p. 2.

[3]Ted J. McLaughlin, Lawrence P. Blum, and David M. Robinson, Communication (Columbus, Ohio: Charles E. Merrill Books, Inc., 1964), p. 21.

and controlled."[4]

The communication network for organizations has two important channels--formal and informal. Formal channels of communication are established by the organizational structure and are of four types. The first type, downward communication, suggests that a person in the organizational hierarchy passes on information to someone lower on the hierarchical ladder. This is the manner in which management passes on directives and initiates subordinates' actions. The second type of communication is upward communication. The primary function of this type of communication is to request and report. This type of communication transmits control information about performance, opinions, and attitudes of subordinates to their superordinates. This is an extremely important aspect in organizational communication since by means of this information superordinates are able to determine whether the information sent was received accurately and whether the organizational system is operating efficiently. This type of communication is commonly referred to as evaluative feedback. A third type is lateral or horizontal communication. This type of communication is across departments or between people on the same level. In the absence of such communication, the coordination of various functions in the organization would be impossible. The fourth type of communication occurs when decisions must be made by persons who are not on the same lateral plane and is referred to as diagonal communication. This type of communication often occurs between line and staff.[5]

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[4]Theo Haiman and William G. Scott, Management in the Modern Organization (Boston, Mass.: Houghton Mifflin Co., 1974), p. 316.

[5]Ibid., pp. 317-318.

Informal channels of communication are those in which communication takes place with colleagues outside of a formal structure. The communication might be based on shared responsibility, personal attraction, and physical location of the work.[6] Keith Davis suggested that every organization has its informal groups or grapevine which are a network forming spontaneous channels that relate facts, half-truths, and rumors.[7]

In considering formal communication, few would deny that the feedback received from upward communication is vital to the well being of the organization. However, barriers are found in organization to this channel of communication. The physical distance between a superordinate and a subordinate is a main factor. A subordinate finds it difficult to communicate with a superordinate he rarely sees or is unable to approach. In larger organizations, the offices of the superordinates are removed from the subordinates and in smaller organizations, the offices are often inaccessible or there may be certain times the superordinate is able to be approached by the subordinates.[8]

Trying to get information to the right person in the organization can be difficult. Very often as information is transmitted it becomes

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[6]Richard A. Schmuck, Philip J. Runkel, Steven L. Saturen, Ronald T. Martell, and C. Brooklyn Derr, Handbook of Organization Development in Schools (Washington: National Press Books, 1972), p. 38.

[7]Keith Davis, Human Behavior at Work (New York: McGraw-Hill, 1972), pp. 261-263.

[8]Patrick E. Connor, Theo Haiman, and William G. Scott, Dimensions in Modern Management (Boston, Mass.: Houghton Mifflin Co., 1974), p. 366.

diluted or distorted. Each person who handles the information tends to edit and filter the information consciously or unconsciously. As a person climbs the hierarchical ladder, personal contacts become less frequent. Individuals holding a position often feel that they are too involved with their own areas of responsibility to listen to their subordinates' ideas, reports, or criticisms.[9]

From the communication theory reviewed, it is apparent that a principal needs communication with the faculty in order to receive information necessary for planning, decision making, or evaluating proposed or established projects. The theorists have indicated that only through effective communication can organizational goals be achieved and that feedback received from upward communication--from subordinate to superordinate--was necessary for a healthy organization.

C. Subordinate-Superordinate Relationships

Frequently, difficulties in communication have a direct bearing on what type of a relationship exists between concerned individuals. Douglas McGregor stated: "It is a fairly safe generalization that difficulties in communication with an organization are more often than not mere symptoms of underlying difficulties in relationships between the parties involved."[10]

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[9]Ibid., pp. 366-367.

[10]Douglas McGregor, The Professional Manager (New York: McGraw-Hill Book Co. Inc., 1967), p. 151.

Each person has his own opinions concerning a situation and confusion is brought about when people hold different views about a situation. By means of communication, each person is assigned a role by which a situation is analyzed. The term role, when used in connection with communication, refers to the code which is used to interpret communications. A situation is governed by rules which may be implicit or explicit. When considering communication, rules can be directives which regulate the flow of communication from one person to another. Rules can also disturb or normalize a situation in communication.[11]

Once roles and rules have been accepted by the members of a group, the situation is further complicated by the perception each person has for his role and the roles of others. Jacob W. Getzels provided the following definition and explanation of role expectations: "Roles are defined in terms of role expectations. A role has certain normative obligations and responsibilities, which may be termed 'role expectations,' and when the role incumbent puts these obligations and responsibilities into effect, he is said to be performing his role."[12]

Getzels conceived of a hierarchy of subordinate-superordinate relationships considered in a social system. The hierarchy of relationships is important for designating and integrating roles and facilities

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[11]Jurgen Ruesch, "Communication and Human Relations: An Interdisciplinary Approach," Basic Readings in Interpersonal Communication, eds. Kim Giffin and Bobby R. Patton (New York: Harper and Row, 1971), pp. 9-14.

[12]Jacob W. Getzels, "Administration as a Social Process," Administrative Theory in Education, ed. Andrew W. Halpin (Chicago: Midwest Administration Center, University of Chicago, 1958), p. 153.

so that the goals of the social system can be achieved. It is through these relationships, that the assignment of status, the provision of facilities, the organization of approaches, the activities, and the evaluation of performance takes place. These functions are concerns of the superordinate members of the hierarchy, but these functions are only effective if the subordinate members are in agreement with it. It is this condition that is always operative in a subordinate-superordinate relationship.[13]

To better understand the subordinate-superordinate relationship, the specific behavior of a role incumbent in an institution must be considered in the light of role expectations and need dispositions. Needs and expectations, according to Getzels, may both be thought of as motives for behavior, the one deriving from personality and the other from institutional obligations and requirements. When two role incumbents--subordinate and superordinate--understand each other, their perceptions are congruent; when the subordinate-superordinate members misunderstand each other, their perceptions are said to be incongruent. Communication in organization is the means through which the needs and expectations of each member is clarified and understood by the other members in the organization.

Stogdill is in close agreement with Getzels concerning the subordinate-superordinate relationship. Stogdill considered a subordinate as holding a set of expectations with regard to the behavior of

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[13]Ibid., p. 150. [14]Ibid., p. 156.

a superordinate and he evaluates the superordinates' behavior against what he feels it should be. The subordinate views his own behavior in relation to the expectations that he holds for his own position. An accurate perception of an individual's own or another's behavior is difficult to obtain. The superordinate may perceive his own behavior in a different manner than the subordinate perceives it. In order to bring the subordinate and superordinate into agreement about their perceptions, evaluative feedback is necessary from the subordinate so that the superordinate understands the subordinate's perception of his position.[15]

Savage considered subordinate-superordinate relationships in context of the school. He stated that when a teacher perceives a principal, who he feels is acting in a manner that the teachers perceive as proper, then congruence exists between the teachers' expectations and his perceptions. When the teachers perceive the principal acting in a manner contrary to expectations, then incongruence exists. Principals who act in a manner that teachers feel are in conformity with their expectations indicate this through staff satisfaction and morale, while the principal who acts in a manner contrary to the teachers expectations results in the teachers expressing dissatisfaction with their work, feel uncertain about school programs, and develop feelings of personal insecurity.[16]

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[15]Ralph M. Stogdill, Individual Behavior and Group Achievement (New York: Oxford Press, 1959), pp. 127-130.

[16]William W. Savage, Interpersonal and Group Relations in Educational Administration (Glenview, Ill.: Scott, Foresman and Company, 1968), p. 131.

A study conducted by Bidwell, confirms that teacher satisfaction in their teaching position was positively related to the congruence between teachers' expectations and perceptions.[17]

The difference or lack of congruence may be considered as a form of role conflict. The lack of congruence between teachers and their principal may be due to erroneous perceptions or a lack of understanding about the roles of the teacher-principal relationship. These are two areas in which communication becomes essential for improved relationships between the teachers and principal.[18]

D. Feedback and Related Research

The present study can best be placed in perspective by considering selected theories which focus on feedback as an important method of improving subordinate-superordinate relationships. Its importance lies in the fact that feedback is an error-correcting process.[19]

Two possible dimensions of feedback considered were frequency of feedback and the positive and negative aspects of feedback. Bavelas conducted an experiment in which he demonstrated the importance of feedback. He used two students for his experiment; the first student

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[17]Charles E. Bidwell, "The Administrative Role and Satisfaction in Teaching," Journal of Educational Sociology, XXIV (September 1955), pp. 41-47.

[18]Savage, op. cit., p. 132.

[19]Schmuck, Runkel, Saturen, Mortell, and Derr, op. cit., p. 35.

was asked to communicate with the other by telephone and to describe the positions of an interconnected series of dominoes. The other student was asked to listen to the sender and arrange the dominoes according to the instructions of the sender. The receiver of the instructions was not allowed to ask questions. Although the sender gave exact and careful directions, the receiver was unable to place the dominoes in their proper sequence.[20] This experiment indicated that some kind of frequency of feedback was essential for complicated information to be transmitted accurately.

Bavelas' experiment concerned itself with directives from the sender to the receiver. Research pointed out that it is not effective to require very much feedback from the receiver to the sender. Herzberg contended that the worker needed freedom to perform his task as he saw it. Initially, some feedback was needed, but after that, feedback should decrease at least to the point of task completion in order to create greater motivation for the worker and greater assurance of task success.[21] Pilecki conducted a study in which he used intermittent feedback--evaluative information channeled at certain times which was usually, though not necessarily defined--and relay feedback--evaluative information which was either solicited or not. These two types of feedback were employed

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[20]Alex Bavelas, "Communications Patterns in Task-Oriented Groups," Journal of the Accoustical Society of America, 22, 1950, pp. 725-730.

[21]Frederick Herzberg, Bernard Mausner, and Barbara Bloch Snyderman, The Motivation to Work (New York: John Wiley and Sons, Inc., 1959), pp. 114-115.

as predictors of success or failure in task accomplishment. Pilecki concluded from his study that, "When intermittent feedback was required of a person engaged in the task, there was less success in accomplishment than when only initial or relay feedback was used." The results of the intensity of feedback used in this study demonstrated, as Herzberg would seem to concur, that too much feedback produced poor task performance.[22]

The positive and negative dimensions of feedback were also analyzed. Berlo stated that communication often involved an action-reaction interdependence. The actions of an individual affected the reaction of the receiver and the reaction of the receiver affected the reaction of the source. The reactions served as feedback. They allowed the initiator of an action to consider how well or how poorly he accomplished his task. The use of feedback increased the communicative effectiveness of an individual since it represented a point of view. The receiver of a communication has perceptions about the source of a communication and the source has perceptions about the receiver. One necessary condition for human communication is an interdependent relationship between the source and the receiver. Berlo contended that, "When a source receives feedback that is rewarding /positive/, he continues to produce the same kind of message. When he gets non-rewarding /negative/ feedback, he eventually changes his message."[23]

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[22]Francis J. Pilecki, "An Investigation of the Predictive Value of Intermittent Feedback and Relay Feedback in Task Accomplishment." (Unpublished Doctoral dissertation: University of Rochester, 1966), pp. 31-33.

[23]David K. Berlo, "Interaction: The Goal of Interpersonal Communication," Giffin and Patton, op. cit., pp. 99-100.

Skinner utilized the terms positive and negative in a different sense from Berlo. He theorized that there are two kinds of reinforcers--positive and negative. The effect of a reinforcer was to increase the probability of a response. A positive reinforcer was any stimulus, the presentation of which strengthened the behavior pattern; a negative reinforcer was any stimulus, the withdrawal of which strengthened the behavior pattern. A positive reinforcement conveyed the idea of adding something, while the negative reinforcement considered the removal of something. According to Skinner, positive reinforcement was to be used more frequently, than negative reinforcement, however, both positive and negative reinforcers were considered rewards. He warned that positive reinforcement should not be considered as something pleasant and negative reinforcement as something annoying. He said, "It would be as difficult to show that the negative reinforcing power of an average stimulus is due to its unpleasantness as to show that the reinforcing power of a positive reinforcer is due to its pleasantness."[24]

Miller also considered positive and negative feedback in systems theory and contended that positive feedback served to identify the system's strengths and areas where maximal functionality and relevance have been achieved. He warned that too much positive feedback may produce complacency. Negative feedback was thought of as being in opposition to the system's direction and was able to stimulate change. Miller stressed

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[24]B. F. Skinner, Science and Human Behavior (New York: The Macmillan Co., 1953), p. 173.

the importance of negative feedback when he stated, "When a system's negative feedback discontinues, its steady state vanishes and at the same time, its boundary disappears and the system terminates."[25] In a study of the flow of feedback between a school and its community, Rusche found that, "not only does negative feedback to the system occur more frequently than positive feedback, but it tends to be specific, pointed, and critical."[26]

Lieberman did a research project involving thirty feedback sessions at fifteen schools. The object of the research was to try to make feedback useful. She offered some methods and techniques as possible ways in which negative feedback can be treated and noted that negative feedback was difficult to give and difficult for the other person to receive. Several strategies were presented as approaches in handling negative feedback:

1. Give individuals a choice as to whether they want to share the data with the group or receive it privately.
2. Let the data speak for itself whenever possible.
3. Enlist the aid of the group. Ask them if the data reported represents the situation. Allow them to explore possible reasons for negative feelings.[27]

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[25]J. G. Miller, "Towards a General Theory for the Behavioral Sciences," Social Sciences (No. 528, 1955), p. 244.

[26]P. J. Rusche, "A Study of Selected Aspects of the Communication Flow Between a School and a Community." (Unpublished Doctoral dissertation: University of Rochester, 1968), p. 139.

[27]Ann Lieberman, "Problems of Making Feedback Useful to School Staff," American Educational Research Association (Feb. 1971), pp. 1-7.

In considering feedback given from the receiver to the sender, Daw and Jones conducted independent research studies concerned with changing principals' behavior through the use of feedback from teachers. Daw designed his study to give a group of principals descriptions of behaviors as appraised by their teachers and a description of an ideal principal. One-third of the principals (experimental groups) received their teachers responses within a week, while the remaining principals (control groups) did not receive feedback until after the experiment. The teachers had to appraise all the principals again after specific time intervals. He found that principals did change in the direction of their teachers' ideals as a result of getting feedback. The study also showed that change due to feedback and the time interval between feedback and the postratings of principals did not prove significant.[28]

Jones proposed in her study, that a principal's behavior is affected by the feedback received from teachers and by the principal's own commitment to a behavioral change. The principals were rated by teachers at the beginning and at the end of the study. These ratings were considered as actual perceptions of their principals. The teachers were also asked to describe their ideal principal. The principals were assigned to one of four feedback groups: the first received actual feedback ratings of their own behavior and ideal ratings for the ideal principal; the second received only ideal ratings; the third received

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[28]Robert W. Daw, "Changing the Behaviors of Elementary School Principals through the Use of Feedback." (Unpublished Doctoral dissertation, Stanford University, 1964), pp. 43-48.

only actual ratings; and the fourth was assigned to a no feedback group. Further, the principals were not asked to commit themselves to change or were asked to choose one of two areas in which to commit themselves--task assistance or personal support behaviors. Jones hypothesized that the first group would change more positively than the other groups and that the second group would similarly surpass the third and fourth groups. It was thought that commitment would cause more positive change than no commitment. The analysis of covariance of scores did not support the hypotheses, however, a chi-square analysis and change patterns suggested that feedback, ideal alone or ideal and actual promoted positive change and that actual alone and solicited commitment to change may impede such change.[29]

E. Summary of Reviewed Literature

The literature reviewed in this chapter focused on communication theory, subordinate-superordinate roles, and feedback theory and research. This chapter considered the use of communication, especially feedback, in the context of subordinate-superordinate relationships. There were two research studies cited which considered the use of feedback to change principals' behavior.

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[29]Mildred Louise Jones, The Effects of Feedback and Commitment to Change the Behavior of Elementary School Principals (Washington, D. C.: U. S. Department of Health, Education and Welfare, 1969), pp. 64-71.

The first section presented basic communication theory. The theorists concerned with communication in organizations, generally, have concluded that communication is vital to the well-being of an organization. The success or failure of an organization can be traced in great measure to its structure of communication.

The theory reviewed in the second section considered the subordinate-superordinate roles. McGregor[30] felt that if the subordinate-superordinate relationships were healthy, the communication structure in the organization would be sound. The theorists stressed the importance of subordinate and superordinate members, clearly understanding their roles and also knowing each others roles in organization so that their perceptions of each others roles would be congruent. The means suggested for bringing about an accurate perception of each others roles was by utilizing feedback.

The final section dealt with feedback; and for many theorists in organization, it was considered of utmost importance because it was an error correcting process that related valuable information from the subordinate to the superordinate in the organization. This section reviewed research in two areas of feedback, the first treated the frequency of feedback and the other was concerned with positive and negative feedback. The research suggested that too much feedback produced poor performance and was not effective. With regard to positive and negative feedback, it was found that negative feedback was most frequently used and was

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[30]McGregor, op. cit., p. 151.

effective in producing change in an organization; while too much positive feedback led to complacency and brought about a condition of entropy. Skinner's[31] findings were in opposition to the other theorists both with regard to frequency and the use of positive and negative reinforcers. This section concluded with two research studies in education that attempted to change principals' behavior by means of feedback from teachers. Both studies suggested that feedback from teachers was a viable means of changing principals' behavior to a more desirable position, according to teachers perceptions.

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[31] Skinner, op. cit., p. 173.

CHAPTER III

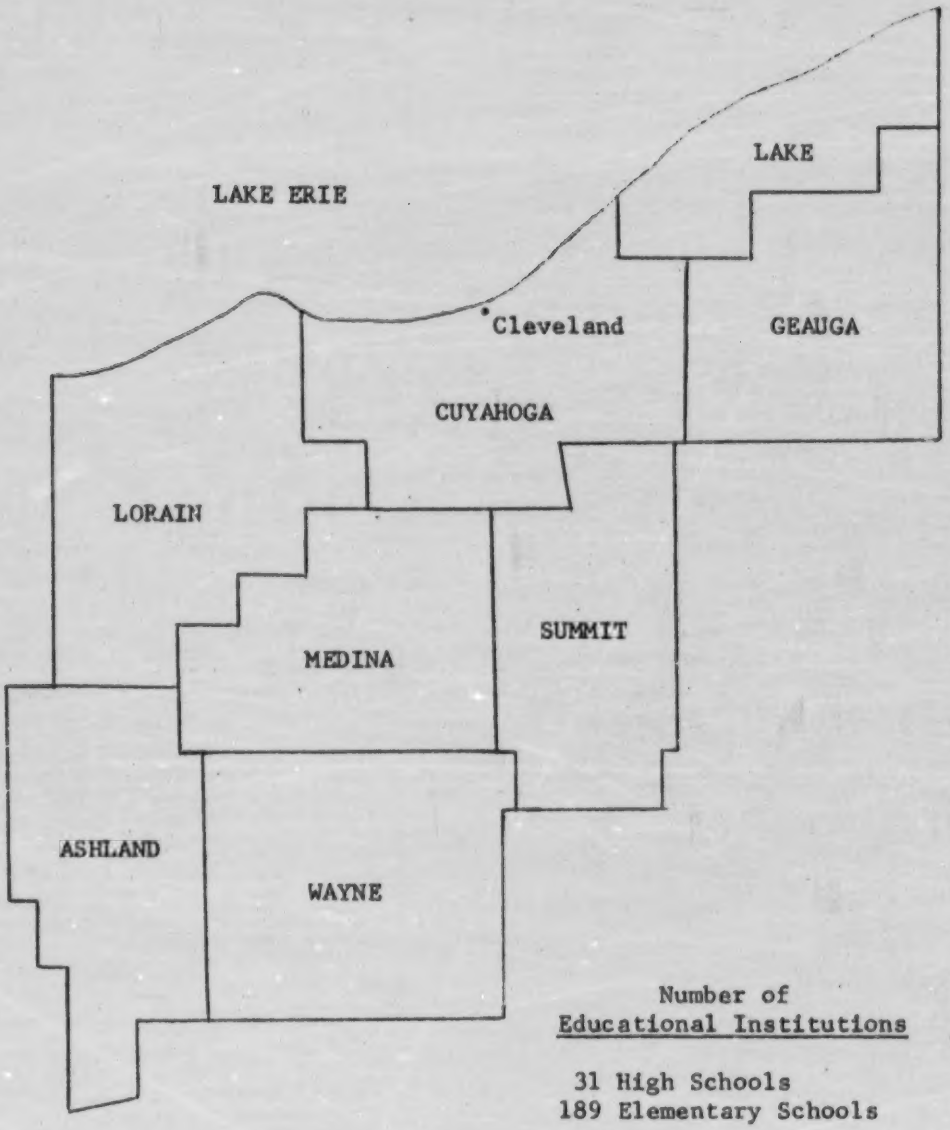
RESEARCH PROCEDURES AND DESIGN

A. Introduction

This study investigated the differential effects of feedback in producing changes in principals' behavior as perceived by teachers. Chapter III describes the procedures undertaken to accomplish this study. The first section considers the random selection of subjects and assignment of subjects into experimental groups. The second section discusses the research design. The third section presents a discussion of the instrument used in this study and how it was revised for the purposes of this study. The final sections present the reliability estimates and review the procedures used in collecting and processing of data.

B. Study Population and Sample

The population for this study was 189 elementary schools in the Cleveland Catholic School System. The Cleveland Catholic School System is comprised of eight counties in the State of Ohio--Ashland, Cuyahoga, Geauga, Lake, Lorain, Medina, Summit, and Wayne. A geographical description of the area comprising the Cleveland Catholic School System is shown in Figure 1. From this population a sample of forty schools was drawn to compose the subjects for the study.



	Number of Educational Institutions	Population
	31 High Schools	22,178
	189 Elementary Schools	72,602

Figure 1. Summary of Geographical Location and Educational Statistics

The selection of subjects proceeded as follows. The superintendent granted permission to conduct the study using the Cleveland Catholic School System, after the administrative board gave their approval. The investigator was notified personally by the superintendent that all 189 elementary schools in the system were available for the study. A list of schools in alphabetical order was provided by the superintendent. In order to select 40 schools necessary for the study, a number from 1 to 189 was assigned to each school in the system. A table of random numbers was used to define the random sample of 40 schools.[1]

The investigator personally approached the 40 principals individually and requested their cooperation in the study. They were told that the study concerned the teachers' perceptions of their behavior with regard to task assistance and personal support. Further, they were told that the study entailed a pretest, a four week treatment period, at which time they may receive some comments from the investigator drawn from information that was received from the teachers, and that after a three week period of no treatment, a posttest would be administered. The entire study was to run from February 24, 1974 to April 26, 1974. The principals were told that the study would not involve the school children. It was also explained that at most twenty minutes of the teachers' time would be needed to take the pretest and again twenty minutes time to take the posttest. They were also asked not to discuss the study with

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[1]Allen L. Edwards, Experimental Design in Psychological Research (New York: Rinehart and Co., Inc., 1951), pp. 378-382.

their teachers or anyone else concerned with the study except the investigator. All 40 principals agreed to cooperate in the study and gave their permission for their faculties to be contacted in order to obtain their cooperation for the study.

The investigator contacted each of the 40 faculties needed for the study individually. Appointments were established for faculty meetings at which time the cooperation of the teachers was requested. They were informed that the study included a pretest which was comprised of twelve questions and that these questions were concerned with their principals' behavior with regard to task assistance and personal support. Further, they were told that there would be a four week period in which either once a week or once every other week they would be required to hand in to the investigator their positive and their negative statements concerning the principals' behavior with regard to task assistance and personel support. Finally, after the four week period was over, there would be a three week interval of no treatment followed by a posttest which would be composed of twelve statements. The teachers were asked not to discuss the study with anyone except the investigator. There were 453 out of 593 teachers who agreed to cooperate with the study. There were 140 teachers who preferred not to be involved in the study because they felt that they were not teaching in their schools long enough to make accurate perceptions of their principals' behavior. Tables 1, 2, and 3 summarize the religious communities of Sisters and the number of schools they served, the number of teachers in each school, and the number of children enrolled in each school.

Once agreement to participate in the study was obtained from the 40 principals and their faculties, the investigator alphabetically assigned numbers to each of the 40 schools from 1 to 40. A table of random numbers

TABLE 1

SUMMARY OF RELIGIOUS COMMUNITIES OF TEACHERS PARTICIPATING IN THE STUDY

Religious Community	Number of Schools Involved in the Study
1. Dominican Sisters of Akron	1
2. Franciscan Sisters of Chicago	1
3. Servants of the Immaculate Heart of Mary	2
4. Sisters of Charity of St. Augustine	1
5. Sisters of Charity of Cincinnati	3
6. Sisters of Notre Dame	5
7. Sisters of St. Dominic (Adrian, Mich.)	2
8. Sisters of St. Francis of Christ the King	1
9. Sisters of St. Joseph of Cleveland	9
10. Sisters of St. Joseph of the Third Order of St. Francis	2
11. Sisters of the Holy Family of Nazareth	1
12. Sisters of the Humility of Mary	3
13. Sisters of the Incarnate Word and Blessed Sacrament	2
14. Ursuline Nuns of Cleveland	8
15. Vincentian Sisters of Charity	1

TABLE 2

SUMMARY OF SCHOOLS AND TEACHERS PARTICIPATING IN THE STUDY

School	Number of Teachers
1. Annunciation (Akron)	7
2. Assumption	11
3. Blessed Sacrament	7
4. Christ the King	13
5. Corpus Christi	7
6. Holy Cross	14
7. Holy Name	7
8. Holy Trinity (Avon)	6
9. Immaculate Conception	8
10. St. Angela	17
11. St. Barnabas	13
12. St. Bernadette	10
13. St. Christine	14
14. St. Clement	17
15. St. Colman	8
16. St. Columbkille	21
17. Sts. Cyril and Methodius	9
18. St. Francis de Sales (Parma)	13
19. St. Gregory the Great	19
20. St. Hilary	14
21. St. James	17
22. St. Jerome	13
23. St. Joseph (Avon Lake)	14
24. St. Joseph (Strongsville)	9
25. St. Leo	12
26. St. Mark	11
27. St. Mary (Lorain)	8
28. St. Mary (Olmsted Falls)	7
29. St. Mel	9
30. St. Michael (Cleveland)	6
31. Our Lady of the Angels	16
32. St. Patrick	15
33. St. Richard	17
34. St. Robert Bellarmine	8
35. St. Rose	9
36. St. Stanislaus	8
37. St. Thomas (Sheffield Lake)	8
38. St. Vincent de Paul (Elyria Township)	8
39. St. William	13
40. Transfiguration	10
TOTAL	453

TABLE 3

SUMMARY OF ENROLLMENT FOR EACH SCHOOL PARTICIPATING IN THE STUDY

School	Number of Students	School	Number of Students
1. Annunciation (Akron)	285	21. St. James	525
2. Assumption	450	22. St. Jerome	454
3. Blessed Sacrament	210	23. St. Joseph (Avon Lake)	417
4. Christ the King	405	24. St. Joseph (Strongsville)	587
5. Corpus Christi	483	25. St. Leo	430
6. Holy Cross	490	26. St. Mark	510
7. Holy Name	331	27. St. Mary (Lorain)	292
8. Holy Trinity (Avon)	211	28. St. Mary (Olmsted Falls)	270
9. Immaculate Conception	252	29. St. Mels	404
10. St. Angela	970	30. St. Michael (Cleveland)	228
11. St. Barnabas	620	31. Our Lady of the Angels	810
12. St. Bernadette	605	32. St. Patrick	1,170
13. St. Christine	409	33. St. Richard	1,060
14. St. Clement	613	34. St. Robert Bellarmine	241
15. St. Colman	274	35. St. Rose	350
16. St. Columbkille	946	36. St. Stanislaus	288
17. Sts. Cyril and Methodius	200	37. St. Thomas (Sheffield Lake)	244
18. St. Francis de Sales (Parma)	882	38. St. Vincent de Paul (Elyria (Township)	205
19. St. Gregory the Great	738	39. St. William	507
20. St. Hilary	457	40. Transfiguration	230

was used to place each of the schools into eight treatment groups.[2] Each treatment group was composed of five schools randomly selected from the 40 schools cooperating in the study. The treatment groups were weekly--positive, negative, positive and negative, and control; and biweekly--positive, negative, positive and negative, and control. Table 4 summarizes the random assignment of the 40 participating schools into treatment groups.

The treatment groups were notified by the investigator personally, both the principals and the faculties, concerning the days the school would be visited. The investigator edited the responses given by the teachers and gave the responses in hand to the principals. The type of responses the principals received depended upon the treatment groups assigned to the school.

After the treatment period, there was an interval of three weeks in which no treatment was administered. Following this interval a post-test was administered to the teachers. Once again, eight schools were contacted each day over a five day period.

C. Research Design

The research design used in this study was a 2^3 factorial design. It consisted of three levels:

Level A - consisting of the presence and absence of positive feedback.

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[2] Ibid.

TABLE 4

SUMMARY OF SCHOOLS IN TREATMENT GROUPS

	Positive	Negative	Positive and Negative	Control
WEEKLY	1. Christ the King (E. Cleveland) 2. St. Christine (Euclid) 3. St. Mary (Olmsted Falls) 4. St. Mel (Cleveland) 5. St. Thomas (Sheffield Lake)	1. Our Lady of the Angels (Cleveland) 2. St. Joseph (Strongsville) 3. St. Mark (Cleveland) 4. St. Mary (Lorain) 5. St. Robert Bellarmine (Euclid)	1. Holy Name (Cleveland) 2. Holy Trinity (Avon) 3. St. Clement (Lakewood) 4. St. Colman (Cleveland) 5. St. Leo (Cleveland)	1. Sts. Cyril and Methodius (Lakewood) 2. St. Jerome (Cleveland) 3. St. Rose (Cleveland) 4. St. Stanislaus (Cleveland) 5. Transfiguration (Cleveland)
BIWEEKLY	1. Blessed Sacrament (Cleveland) 2. St. James (Lakewood) 3. St. Joseph (Avon Lake) 4. St. Michael (Cleveland) 5. St. Patrick (Cleveland)	1. Assumption (Brookpark) 2. St. Angela (Fairview Park) 3. St. Bernadette (Westlake) 4. St. Francis de Sales (Parma) 5. St. William (Euclid)	1. Corpus Christi (Cleveland) 2. Holy Cross (Euclid) 3. Immaculate Conception (Cleveland) 4. St. Barnabas (Northfield) 5. St. Vincent de Paul (Elyria Township)	1. Annunciation (Akron) 2. St. Columbkille (Seven Hills) 3. St. Gregory the Great (S. Euclid) 4. St. Hilary (Akron) 5. St. Richard (North Olmsted)

Level B - consisting of the presence and absence of negative feedback.

Level C - consisting of the frequency of feedback, namely, weekly or biweekly.

The statistic used to analyze the data was the analysis of covariance. Through this procedure the pretest becomes the covariate and is used to reduce the error variability in the posttest measure.

D. Instrumentation

The instrument employed in this study was a modified version of an instrument developed by Jones. In its original form, there were twelve items consisting of six positive and six negative statements concentrating on task assistance and personal support with regard to a principals' behavior. For this study the six negative statements were reworded positively so that all negatives would be removed to avoid bias. For each specific item, respondents were asked to indicate their answer by placing a check mark after the correct response which best suited their perceptions of their principal. A five point word scale was used and read: Always, Most Often, Usually, Sometimes, and Never. This was the second and final change in the format of the test, since the original test provided a separate answer sheet and used a seven point scale.

E. Reliability Estimates

The Comprel Program was used to obtain the best-split reliability estimates and the estimate of the reliability of the whole test. The

mean for each statement was found by adding all the responses for each of the statements and then dividing by the number of tests. This procedure was followed for all twelve statements for the pretests and post-tests. It was this process that established the pretest-posttest mean scores for each of the twelve statements, for each school. These means were analyzed by the Comprel Program.[3]

The coefficient alpha for the pretest was .4100 and the corrected best-split was .5501 and the coefficient alpha for the posttest was .8616 and the corrected best-split was .8772. An explanation which is consistent with the hypothesis is that in the pretest there was a restricted range and very little difference between the principals; they were a homogeneous group. In comparing the pretest with the posttest, a larger difference is apparent. In the posttest, as a result of the treatment a difference was introduced which seems to account for a wider range, more difference, and as a result a greater reliability with regard to the posttest.

F. Procedures

Collecting Data

Once the 40 principals and their faculties agreed to participate in the study, a pretest was administered on a day agreeable with both the principals and the teachers. The teachers responded to the test in their

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[3]William D. Schafer, "Computer Program to Generate Reliability Indices for Composite Tests Including a Cross Validation Technique." Educational and Psychological Measurement, Vol. 32, No. 3 (Autumn, 1972), pp. 793-795.

classrooms and when they finished they placed their completed test in a sealed envelope and handed it to the investigator. It was in this manner that all pretests were received by the investigator.

When the pretest was completed, the treatment period began. The investigator visited all the schools either weekly or biweekly depending upon the treatment group to which they had been assigned. The day of the visit was agreed upon by the principals and the teachers connected with the study. During the treatment period the teachers were asked to list three positive and three negative statements concerning their principals behavior with regard to task assistance and personal support. The teachers were requested to place their statements in a sealed envelope and deposit them in a container designated for this purpose in a room that was not connected with the principal's office. The investigator collected the responses from the container, compiled, edited the statements, and personally handed the reworded and rewritten statements to the principal, thereby protecting the anonymity of the teachers.

The statements that the principal received were either all positive, all negative, both positive and negative, or the principal received no feedback depending on the treatment group to which the school was assigned. These statements were given to the principal once a week or once every other week over a four week period. Both the type of feedback mentioned above and its frequency depended upon the treatment group assigned to the school.

After the treatment period, there was an interval of three weeks in which no treatment took place. The following week the investigator

administered the posttest to each teacher individually. The teachers responded to the test in their own classrooms and handed a sealed envelope containing the completed test to the investigator. This procedure was followed for collecting the posttests for all 40 schools. Eight schools a day were visited over a five day period, running from Monday through Friday. The days the investigator visited the schools were all agreed upon by the principals and the teachers. Tables 5 through 9 summarize the dates of the pretest, the type of treatment given each school, the days the schools were visited, and concludes with the dates of the posttest.

Processing of Data

The tests--pretests and posttests--were graded in two parts. The first part considered statements 1, 3, 5, 7, 9 and 11 which dealt with task assistance and statements 2, 4, 6, 8, 10 and 12 which treated personal support. Statements 2, 3, 5, 6, 8 and 9 were the negative statements reworded positively and were scored as follows: Never = 5; Sometimes = 4; Usually = 3; Most Often = 2; and Always = 1. Statements 1, 4, 7, 10, 11 and 12 were positive statements and were scored as follows: Always = 5; Most Often = 4; Usually = 3; Sometimes = 2; and Never = 1. A total score was determined for task assistance and another score for personal support. These scores were divided by the number of tests to establish mean scores for task assistance and mean scores for personal support for each school. The pretest-posttest means for each school were fed into the computer by means of the teletype machine. To compute the statistics, the analysis of covariance was used. The results are considered in Chapter IV.

TABLE 5

SUMMARY OF SCHOOLS VISITED ON MONDAYS DURING THE STUDY

	Type of Treatment[a]	Dates
Pretest		February 25, 1974
1. Blessed Sacrament	Bi - P	March 4, 18
2. Holy Name	W - P&N	4, 11, 18, 25
3. Our Lady of the Angels	W - N	4, 11, 18, 25
4. St. Colman	W - P&N	4, 11, 18, 25
5. St. Francis de Sales (Parma)	Bi - N	4, 18
6. St. Michael (Cleveland)	Bi - P	4, 18
7. St. Patrick	Bi - P	4, 18
8. St. Rose	W - C	4, 11, 18, 25
Posttest		April 22, 1974

[a] W = Weekly
Bi = Biweekly
P = Positive
N = Negative
C = Control

TABLE 6

SUMMARY OF SCHOOLS VISITED ON TUESDAYS DURING THE STUDY

	Type of Treatment[a]	Dates
Pretest		February 26, 1974
1. Christ the King	W - P	March 5, 12, 19, 26
2. Holy Cross	Bi - P&N	5, 19
3. Immaculate Conception	Bi - P&N	5, 19
4. St. Christine	W - P	5, 12, 19, 26
5. St. Gregory the Great	Bi - C	5, 19
6. St. Jerome	W - C	5, 12, 19, 26
7. St. Robert Bellarmine	W - N	5, 12, 19, 26
8. St. William	Bi - N	5, 19
Posttest		April 23, 1974

[a] W = Weekly
Bi = Biweekly
P = Positive
N = Negative
C = Control

TABLE 7

SUMMARY OF SCHOOLS VISITED ON WEDNESDAYS DURING THE STUDY

	Type of Treatment[a]	Dates
Pretest		February 27, 1974
1. Annunciation (Akron)	Bi - C	March 6, 20
2. Assumption	Bi - N	6, 20
3. Corpus Christi	Bi - P&N	6, 20
4. St. Barnabas	Bi - P&N	6, 20
5. St. Columbkille	Bi - C	6, 20
6. St. Hilary	Bi - C	6, 20
7. St. Joseph (Strongsville)	W - N	6, 13, 20, 27
8. St. Leo	W - P&N	6, 13, 20, 27
Posttest		April 24, 1974

[a] W = Weekly
Bi = Biweekly
P = Positive
N = Negative
C = Control

TABLE 8

SUMMARY OF SCHOOLS VISITED ON THURSDAYS DURING THE STUDY

	Type of Treatment[a]	Dates
Pretest		February 28, 1974
1. St. Angela	Bi - N	March 7, 21
2. St. Bernadette	Bi - N	7, 21
3. St. Clement	W - P&N	7, 14, 21, 28
4. Sts. Cyril and Methodius	W - C	7, 14, 21, 28
5. St. James	Bi - P	7, 21
6. St. Mark	W - N	7, 14, 21, 28
7. St. Mel	W - P	7, 14, 21, 28
8. St. Richard	Bi - C	7, 21
Posttest		April 25, 1974

[a] W = Weekly
Bi = Biweekly
P = Positive
N = Negative
C = Control

TABLE 9

SUMMARY OF SCHOOLS VISITED ON FRIDAYS DURING THE STUDY

	Type of Treatment[a]	Dates
Pretest		March 1, 1974
1. Holy Trinity (Avon)	W - P&N	March 8, 15, 22, 29
2. St. Joseph (Avon Lake)	Bi - P	8, 22
3. St. Mary (Lorain)	W - N	8, 15, 22, 29
4. St. Mary (Olmsted Falls)	W - P	8, 15, 22, 29
5. St. Stanislaus	W - C	8, 15, 22, 29
6. St. Thomas (Sheffield Lake)	W - P	8, 15, 22, 29
7. St. Vincent de Paul (Elyria Township)	Bi - P&N	8, 22
8. Transfiguration	W - C	8, 15, 22, 29
Posttest		April 26, 1974

[a] W = Weekly
Bi = Biweekly
P = Positive
N = Negative
C = Control

CHAPTER IV

ANALYSES AND FINDINGS

A. Introduction

The present study sought to determine if there were any significant changes produced in principals' behavior as perceived by teachers as a result of differential effects of feedback. There were seven hypotheses to be tested. In order to test the seven hypotheses considered in this study, the analysis of covariance was employed and the F ratios were calculated with 1,31 degrees of freedom.[1] The assumption of homogeneity of regression was tested for both task assistance and personal support of teachers.[2] It was found in both instances to be supported. The results are shown in Appendix B, Tables 1 and 2. The analysis of covariance was applied to the subjects' mean scores, both the pretest and posttest scores, which were considered in two parts. The first part was the pretest-posttest mean scores for the principals concerning task assistance to teachers and the other part was the pretest-posttest mean scores for the principals with regard to personal support for teachers. In seven of the eight treatment groups, very little difference was shown between the pretest-posttest means; while the eighth treatment group, negative weekly feedback, showed a definite increase. The pretest means were used as a measure to make the posttest adjustments.

B. Task Assistance to Teachers

The complete cell mean scores for the eight groups tested are

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[1] Dean J. Clyde, Elliott M. Cramer, and Richard J. Sherin, Multivariate Statistical Programs (Coral Gables, Fla.: Biometric Laboratory, University of Miami, 1966).

[2] C. Mitchell Dayton, Analysis of Covariance (ANCOVA), Department of Measurement and Statistics, University of Maryland (Undated Manuscript).

presented and include the raw means, adjusted means, variances, and adjusted variances for task assistance to teachers. The cell means are presented to offer an overview of the results obtained. These cell means for task assistance to teachers appear in Table 10. Table 11 presents a summary of the analysis of covariance on the main effects, first order and second order interactions.

Main Effects in the Analysis of Covariance

Hypothesis 1 stated that positive feedback produces no difference in principals' behavior as perceived by teachers as compared with no positive feedback. The F ratio was 2.580 for the positive main effect, which is not significant at the .05 level. A summary of combined raw and adjusted means for positive-no positive feedback for task assistance to teachers is shown in Table 12.

Hypothesis 2 suggested that negative feedback produces a difference in principals' behavior as perceived by teachers as compared with no negative feedback. The F ratio was 8.517 for the negative main effect, which is significant at the .05 level. The combined adjusted means for negative-no negative feedback on task assistance to teachers, indicated that negative feedback had a larger mean than no negative feedback. Table 12 presents a summary of combined raw and adjusted means for negative-no negative feedback.

Hypothesis 3 stated that weekly feedback produces a difference in principals' behavior as perceived by teachers as compared with biweekly feedback. The F ratio was 10.941 for the frequency main effect, which

TABLE 10

SUMMARY TABLE OF RAW AND ADJUSTED CRITERION MEANS AND VARIANCES--
TASK ASSISTANCE

Group[a] PNF	N	Raw Mean	Adjusted Mean	Variance	Adjusted Variance
111	5	22.6154	22.6050	1.6402	.5086
112	5	20.5764	20.7871	7.2738	2.2557
121	5	22.2782	22.1357	2.0658	.6406
122	5	23.0502	21.7992	5.6635	1.7563
211	5	23.9738	24.6695	.9685	.3004
212	5	22.7004	22.4344	1.1790	.3656
221	5	21.5136	21.3483	2.0495	.6356
222	5	20.2182	21.1469	9.1177	2.8275

[a] P = 1 is positive and 2 is no positive

N = 1 is negative and 2 is no negative

F = 1 is weekly and 2 is biweekly

TABLE 11

SUMMARY OF ANALYSIS OF COVARIANCE FOR THE MAIN AND INTERACTION EFFECTS FOR TASK ASSISTANCE

Source[a]	SS	DF	MS	F[b]	Probability Less Than
Within	37.162	31	1.199		
Regression	82.669	1	82.669	68.960	.001
P	3.093	1	3.093	2.580	.118
N	10.210	1	10.210	8.517 *	.006
F	13.116	1	13.116	10.941 *	.002
PN	16.134	1	16.134	13.459 *	.001
PF	.049	1	.049	.041	.841
NF	7.692	1	7.692	6.416 *	.017
PNF	.175	1	.175	.146	.705

[a] P = Positive
N = Negative
F = Frequency

[b] F ratios computed assuming a fixed-effects model.

*Significant at .05 level.

TABLE 12

SUMMARY OF COMBINED RAW MEANS AND COMBINED ADJUSTED MEANS FOR TASK ASSISTANCE TO TEACHERS CONCERNING POSITIVE-NO POSITIVE, NEGATIVE-NO NEGATIVE, AND WEEKLY-BIWEEKLY FEEDBACK

POSITIVE-NO POSITIVE	
Posttest Raw Mean for all of Level I (Positive Feedback)	22.1300
Posttest Raw Mean for all of Level II (No Positive Feedback)	22.1015
Adjusted Mean for all of Level I (Positive Feedback)*	21.8317
Adjusted Mean for all of Level II (No Positive Feedback)*	22.3997
NEGATIVE-NO NEGATIVE	
Posttest Raw Mean for all of Level I (Negative Feedback)	22.4665
Posttest Raw Mean for all of Level II (No Negative Feedback)	21.7651
Adjusted Mean for all of Level I (Negative Feedback)*	22.6240
Adjusted Mean for all of Level II (No Negative Feedback)*	21.6075
WEEKLY-BIWEEKLY	
Posttest Raw Mean for all of Level I (Weekly Feedback)	22.5953
Posttest Raw Mean for all of Level II (Biweekly Feedback)	21.6363
Adjusted Mean for all of Level I (Weekly Feedback)*	22.6896
Adjusted Mean for all of Level II (Biweekly Feedback)*	21.5419

*The adjustment was accomplished using pretest means.

is significant at the .05 level. The combined adjusted means for weekly and biweekly feedback showed that weekly feedback had a larger mean than biweekly feedback. A summary of combined raw and adjusted means for weekly-biweekly feedback is shown in Table 12.

First-Order Interactions in Analysis of Covariance

The first-order interactions included the interactions of positive and negative feedback, positive and frequencies of feedback, and negative and frequencies of feedback. Hypothesis 4 suggested that there is an interaction between positive and negative feedback over frequencies in producing change in principals' behavior as perceived by teachers. The F ratio was 13.459 for positive and negative feedback interaction, which is significant at the .05 level. The combined adjusted means for the interaction of positive-negative feedback demonstrated that the condition of no positive-negative produced the largest mean, as shown in Table 13.

Hypothesis 5 stated that there is no interaction between positive and frequencies of feedback over negative feedback conditions in producing change in principals' behavior as perceived by teachers. The F ratio was .041 for positive-frequencies of feedback interaction, which is not significant at the .05 level.

Hypothesis 6 suggested that there is an interaction between negative and frequencies of feedback over positive feedback conditions in producing change in principals' behavior as perceived by teachers. The F ratio was 6.416 for negative-frequencies of feedback interaction, which is significant at the .05 level. The combined adjusted means for

TABLE 13

SUMMARY OF COMBINED RAW MEANS AND COMBINED ADJUSTED MEANS FOR TASK ASSISTANCE TO TEACHERS; CONCERNING THE INTERACTIONS OF POSITIVE-NEGATIVE, POSITIVE-FREQUENCIES, AND NEGATIVE-FREQUENCIES

PN[a]	Interaction--Positive-Negative	
	Raw Mean	Adjusted Mean*
11	21.5959	21.6960
12	22.6642	21.9674
21	23.3371	23.5520
22	20.8659	21.2476

PF[a]	Interaction--Positive-Frequencies	
	Raw Mean	Adjusted Mean*
11	22.4468	22.3704
12	21.8133	21.2932
21	22.7437	23.0089
22	21.4593	21.7906

NF[a]	Interaction--Negative-Frequencies	
	Raw Mean	Adjusted Mean*
11	23.2946	23.6372
12	21.6384	21.6108
21	21.8959	21.7420
22	21.6342	21.4730

[a]P = 1 is positive and 2 is no positive
N = 1 is negative and 2 is no negative
F = 1 is weekly and 2 is biweekly

*The adjustment was accomplished using pretest means.

negative-frequencies of feedback demonstrated that the condition of negative weekly feedback produced the largest mean, as presented in Table 13. Figures 2 and 3 present a graphic demonstration of the significant first-order interactions.

Second-Order Interaction in Analysis of Covariance

Hypothesis 7 stated that there is no interaction between positive, negative, and frequencies of feedback in producing change in principals' behavior as perceived by teachers. The F ratio was .146 for positive, negative, and frequencies of feedback interaction, which is not significant at the .05 level.

C. Personal Support of Teachers

The complete cell mean scores for the eight groups tested are presented in Table 14 and include the raw means, adjusted means, variances, and adjusted variances regarding personal support of teachers. The cell means are presented to offer an overview of the results obtained. Table 15 presents a summary of the analysis of covariance on the main effects, first order and second order interactions.

Main Effects in the Analysis of Covariance

Hypothesis 1 stated that positive feedback produces no difference in principals' behavior as perceived by teachers as compared with no positive feedback. The F ratio was 14.751 for the positive main effect,

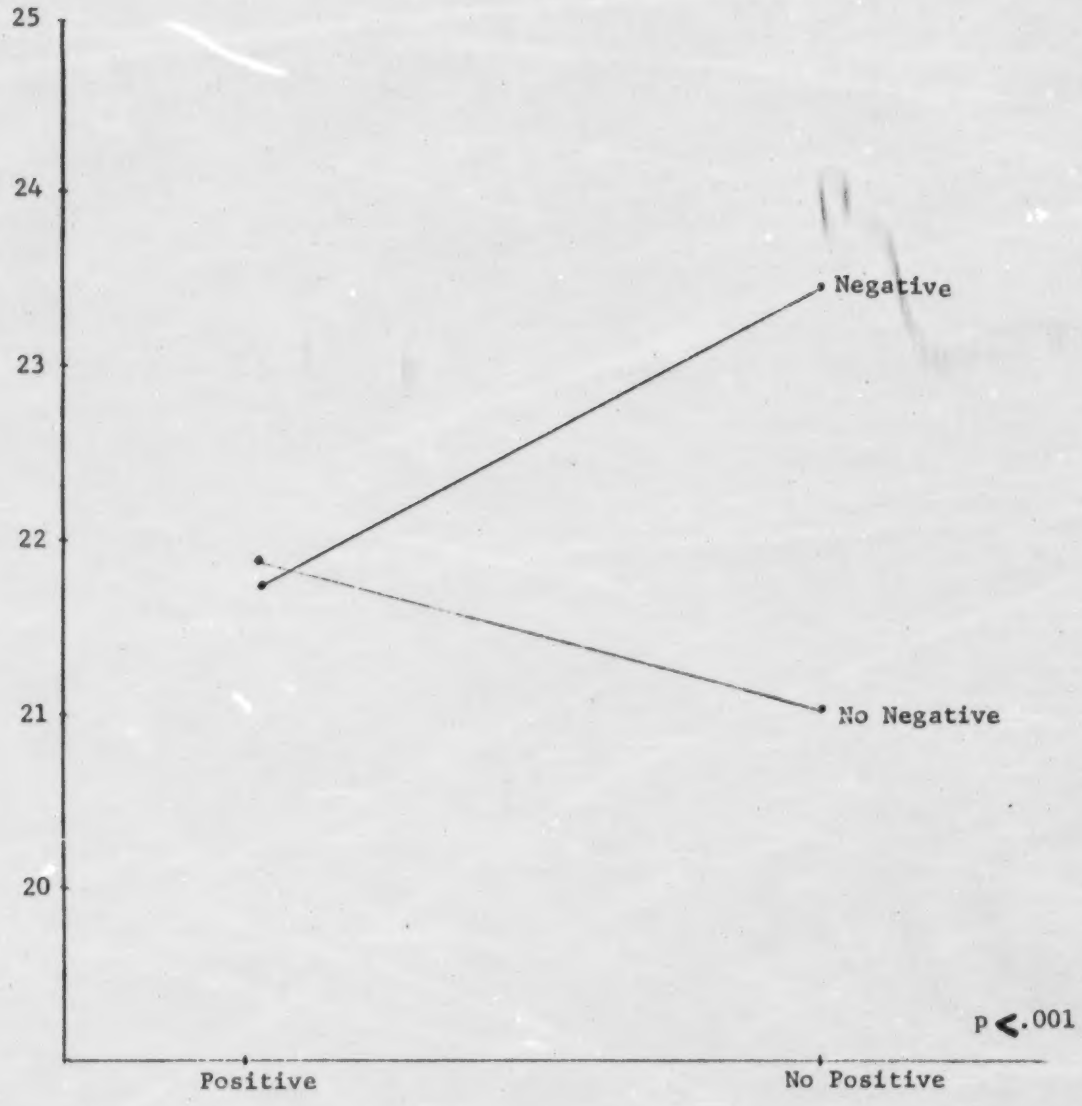

Figure 2. Positive-Negative Interaction for Task Assistance to Teachers

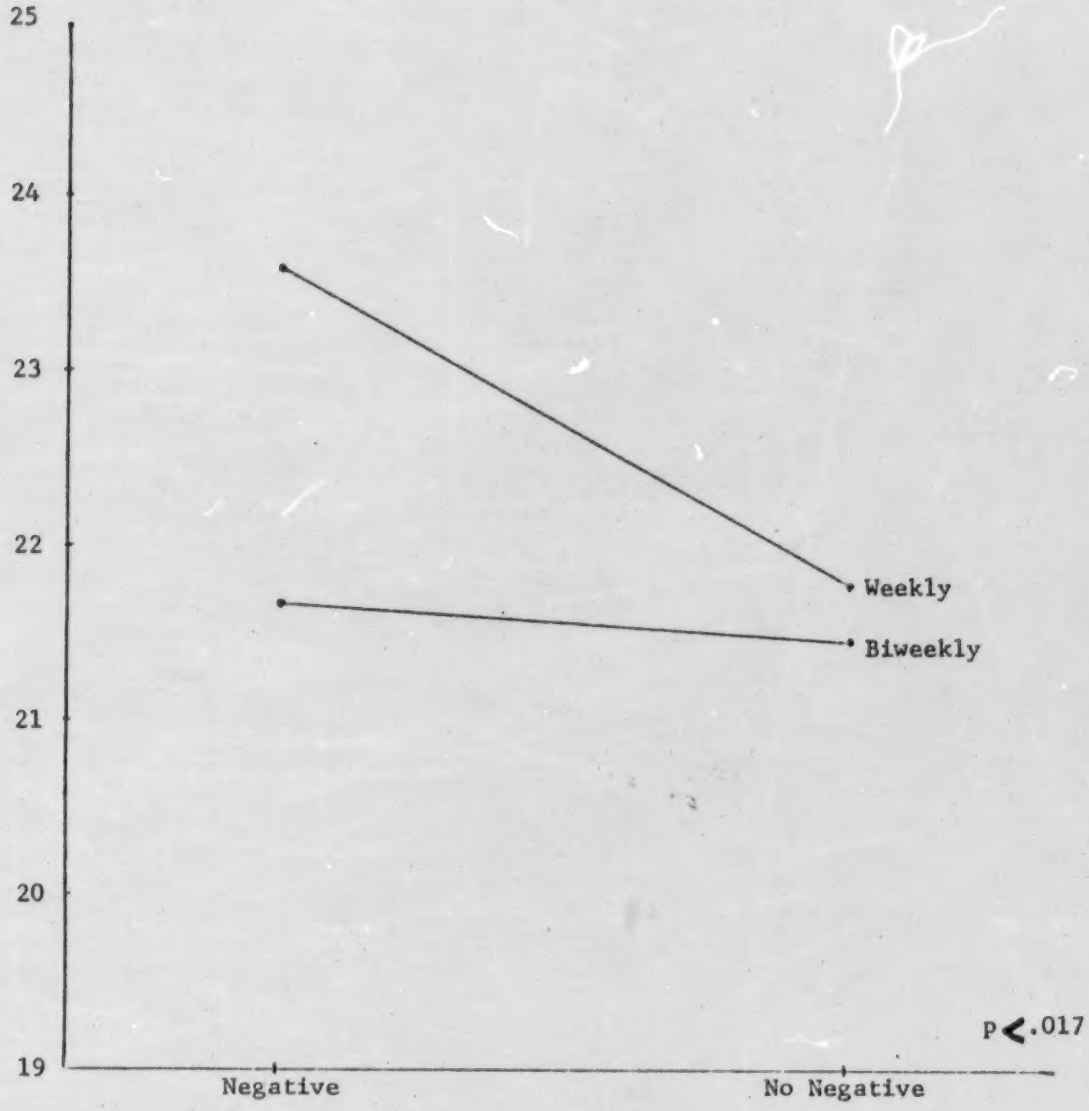

Figure 3. Negative-Frequencies Interaction for Task Assistance to Teachers

TABLE 14

SUMMARY TABLE OF RAW AND ADJUSTED CRITERION MEANS AND VARIANCES--
PERSONAL SUPPORT

Group[a] PNF	N	Raw Mean	Adjusted Mean	Variance	Adjusted Variance
111	5	22.0630	22.0529	1.9835	.5982
112	5	20.5428	20.9621	10.2529	3.0920
121	5	21.8618	21.7869	.2432	.0734
122	5	22.2572	21.2719	2.6464	.7981
211	5	25.1106	25.1750	.6549	.1975
212	5	22.2030	22.1515	1.4360	.4331
221	5	21.8716	21.7501	2.5968	.7831
222	5	20.9980	21.7576	4.4808	1.3513

[a]P = 1 is positive and 2 is no positive

N = 1 is negative and 2 is no negative

F = 1 is weekly and 2 is biweekly

TABLE 15

SUMMARY OF ANALYSIS OF COVARIANCE FOR THE MAIN AND INTERACTIVE EFFECTS OF PERSONAL SUPPORT

Source[a]	SS	DF	MS	F[b]	Probability Less Than
Within	29.308	31	.945		
Regression	67.870	1	67.870	71.789	.001
P	13.946	1	13.946	14.751*	.001
N	8.849	1	8.849	9.360*	.005
F	13.340	1	13.340	14.111*	.001
PN	8.962	1	8.962	9.480*	.004
PF	1.225	1	1.225	1.296	.264
NF	8.122	1	8.122	8.591*	.006
PNF	3.587	1	3.587	3.795	.061

[a] P = Positive
N = Negative
F = Frequency

[b] F ratios computed assuming a fixed-effects model.

*Significant at .05 level.

57a

57

which is significant at the .05 level. With regard to personal support of teachers, the combined adjusted means for positive-no positive feedback, showed that no positive feedback produced a larger mean than positive feedback. A summary of combined raw and adjusted means for positive-no positive feedback concerning personal support of teachers is shown in Table 16.

Hypothesis 2 suggested that negative feedback produces a difference in principals' behavior as perceived by teachers as compared with no negative feedback. The F ratio was 9.360 for the negative main effect, which is significant at the .05 level. The combined adjusted means for negative-no negative feedback on personal support of teachers, indicated a larger mean for negative feedback than no negative feedback. Table 16 presents a summary of combined adjusted means for negative-no negative feedback.

Hypothesis 3 stated that weekly feedback produces a difference in principals' behavior as perceived by teachers as compared with biweekly feedback. The F ratio was 14.111 for the frequency main effect, which is significant at the .05 level. The combined adjusted means for weekly and biweekly feedback, showed a larger mean for weekly feedback than biweekly feedback. Table 16 presents a summary of combined raw and adjusted means for weekly-biweekly feedback.

First-Order Interaction in Analysis of Covariance

The first-order interactions included the interactions of positive and negative feedback, positive and frequencies of feedback, and negative

TABLE 16

SUMMARY OF COMBINED RAW MEANS AND COMBINED ADJUSTED MEANS FOR PERSONAL SUPPORT GIVEN TO TEACHERS; CONCERNING POSITIVE-NO POSITIVE, NEGATIVE-NO NEGATIVE, AND WEEKLY-BIWEEKLY FEEDBACK

POSITIVE-NO POSITIVE	
Posttest Raw Mean for all of Level I (Positive Feedback)	21.6812
Posttest Raw Mean for all of Level II (No Positive Feedback)	22.5458
Adjusted Mean for all of Level I (Positive Feedback)*	21.6812
Adjusted Mean for all of Level II (No positive Feedback)*	22.5462
NEGATIVE-NO NEGATIVE	
Posttest Raw Mean for all of Level I (Negative Feedback)	22.4799
Posttest Raw Mean for all of Level II (No Negative Feedback)	21.7472
Adjusted Mean for all of Level I (Negative Feedback)*	22.5853
Adjusted Mean for all of Level II (No Negative Feedback)*	21.6416
WEEKLY-BIWEEKLY	
Posttest Raw Mean for all of Level I (Weekly Feedback)	22.7268
Posttest Raw Mean for all of Level II (Biweekly Feedback)	21.5003
Adjusted Mean for all of Level I (Weekly Feedback)*	22.6912
Adjusted Mean for all of Level II (Biweekly Feedback)*	21.5357

*The adjustment was accomplished using pretest means.

and frequencies of feedback. Hypothesis 4 suggested that there is an interaction between positive and negative feedback over frequencies in producing change in principals' behavior as perceived by teachers. The F ratio was 9.480 for the positive and negative feedback interaction, which is significant at the .05 level. The combined adjusted means for positive-negative feedback demonstrated that the condition of no positive-negative produced the largest mean, as shown in Table 17.

Hypothesis 5 stated that there is no interaction between positive and frequencies of feedback over negative feedback conditions in producing change in principals' behavior as perceived by teachers. The F ratio was 1.296 for the positive-frequencies of feedback interaction, which is not significant at the .05 level.

Hypothesis 6 suggested that there is an interaction between negative and frequencies of feedback over positive feedback conditions in producing change in principals' behavior as perceived by teachers. The F ratio was 8.591 for negative-frequencies of feedback interaction, which is significant at the .05 level. The combined adjusted means for negative-frequencies of feedback demonstrated that the condition of negative-weekly feedback produced the largest mean, as presented in Table 17. Figures 4 and 5 present a graphic demonstration of the significant first-order interactions.

Second Order Interaction in Analysis of Covariance

Hypothesis 7 stated that there is no interaction between positive, negative, and frequencies of feedback in producing change in

TABLE 17

SUMMARY OF COMBINED RAW MEANS AND COMBINED ADJUSTED MEANS FOR PERSONAL SUPPORT GIVEN TO TEACHERS; CONCERNING THE INTERACTIONS OF POSITIVE-NEGATIVE, POSITIVE-FREQUENCY INTERACTION, AND NEGATIVE-FREQUENCIES

	Interaction--Positive-Negative	
PN[a]	Raw Mean	Adjusted Mean*
11	21.2894	21.5075
12	22.0595	21.5294
21	23.6568	23.6632
22	21.4348	21.7538

	Interaction--Positive-Frequencies	
PF[a]	Raw Mean	Adjusted Mean*
11	21.9624	21.9199
12	21.4000	21.1170
21	23.4911	23.4626
22	21.6005	21.9546

	Interaction--Negative-Frequencies	
NF[a]	Raw Mean	Adjusted Mean*
11	23.5868	23.6140
12	21.3729	21.5568
21	21.8667	21.7685
22	21.6276	21.5148

[a] P = 1 is positive and 2 is no positive
N = 1 is negative and 2 is no negative
F = 1 is weekly and 2 is biweekly

*The adjustment was accomplished using pretest means.

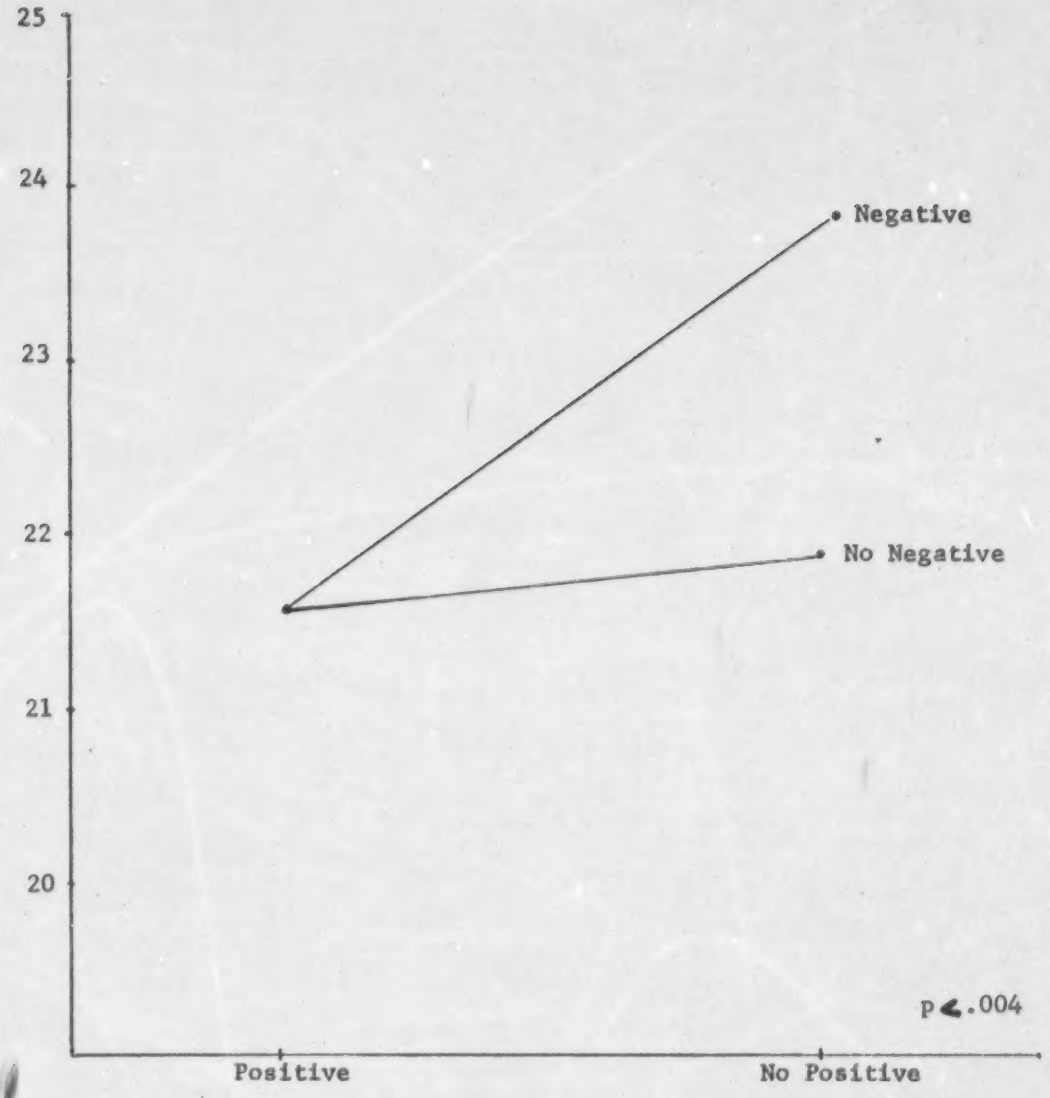

Figure 4. Positive-Negative Interaction for Personal Support of Teachers

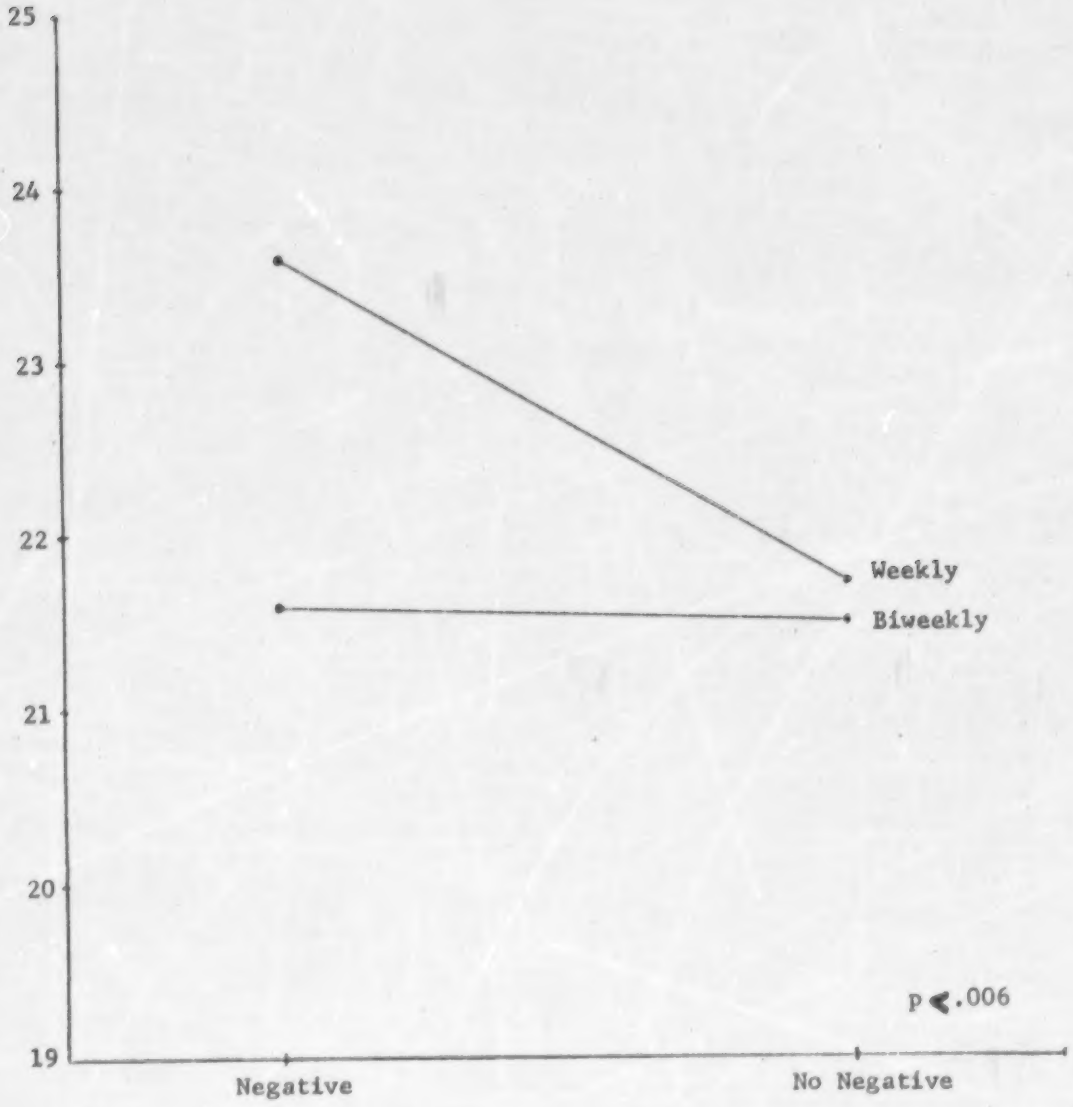

Figure 5. Negative-Frequencies Interaction for Personal Support of Teachers

principals' behavior as perceived by teachers. The F ratio was 3.795 for positive, negative, and frequencies of feedback interaction, which is not significant at the .05 level.

The analyses and findings showed that positive feedback demonstrated no significance in relation to task assistance to teachers, either alone or with frequencies of feedback but was significant interacting with negative feedback. Negative and frequencies of feedback did show significance alone and interacting together. In considering personal support of teachers, positive feedback showed significance alone and interacting with negative feedback. Negative feedback showed significance alone, interacting with positive feedback and frequencies of feedback. Frequencies of feedback showed significance alone and interacting with negative feedback. There was no significance shown in the second order interaction between positive, negative, and frequencies of feedback either with regard to task assistance or personal support of teachers.

CHAPTER V

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

A. Introduction

This chapter contains an analysis of the research findings presented in Chapter IV. The first section discusses the seven research hypotheses, which were analyzed with regard to task assistance and personal support of teachers. The second section discusses the implications drawn from the research. The final section presents recommendations for further research.

B. Analysis and Conclusions

Main Effects in Analysis of Covariance for Task Assistance

This study sought to determine if differential effects of feedback produced change in principals' behavior as perceived by teachers. The analysis of covariance was applied to the mean scores for task assistance to teachers. Hypothesis 1 stated that positive feedback produces no difference in principals' behavior as perceived by teachers as compared with no positive feedback. The F ratio was 2.580 for the positive main effect, which is not significant at the .05 level. Consequently,

the hypothesis was supported, that is, positive-no positive feedback did not produce a difference in principals' behavior as perceived by teachers.

Hypothesis 2 suggested that negative feedback produces a difference in principals' behavior as perceived by teachers as compared with no negative feedback. The F ratio was 8.517 for the negative main effect, which is significant at the .05 level. The combined adjusted means for negative-no negative feedback on task assistance to teachers, indicated that negative feedback had a larger mean than no negative feedback. Therefore, the hypothesis was upheld. Negative feedback produced a difference in principals' behavior as perceived by teachers as compared to no negative feedback.

Hypothesis 3 stated that weekly feedback produces a difference in principals' behavior as perceived by teachers as compared with biweekly feedback. The F ratio was 10.941 for the frequency main effect, which is significant at the .05 level. The combined adjusted means for weekly and biweekly feedback showed that weekly feedback had a larger mean than biweekly feedback. As a result, the hypothesis was supported. Weekly feedback did produce a difference in principals' behavior as perceived by teachers as compared with biweekly feedback.

First Order Interaction in Analysis of Covariance for Task Assistance

Hypothesis 4 suggested that there is an interaction between positive and negative feedback over frequencies in producing change in principals' behavior as perceived by teachers. The F ratio was 13.459 for positive and negative feedback interaction, which is significant at the

.05 level. The combined adjusted means for the interaction of positive-negative feedback demonstrated that the condition of no positive-negative feedback produced the largest mean. Therefore, the data supported the hypothesis. The combined adjusted means showed that no positive-negative interaction resulted in a change in principals' behavior as perceived by teachers, which exceeded change produced in the other treatment groups and in the control group.

Hypothesis 5 stated that there is no interaction between positive and frequencies of feedback over negative feedback conditions in producing change in principals' behavior as perceived by teachers. The F ratio was .041 for positive-frequencies of feedback interaction, which is not significant at the .05 level. Consequently, the data supported the hypothesis. There was no interaction between positive-frequencies of feedback in producing change in principals' behavior as perceived by teachers.

Hypothesis 6 suggested that there is an interaction between negative and frequencies of feedback over positive feedback conditions in producing change in principals' behavior as perceived by teachers. The F ratio was 6.416 for negative-frequencies of feedback interaction, which is significant at the .05 level. The combined adjusted means for negative-frequencies of feedback demonstrated that the condition of negative weekly feedback produced the largest mean. As a result, the data supported the hypothesis. The combined adjusted means showed that negative-weekly interaction resulted in a change in principals' behavior as perceived by teachers, which exceeded change produced by negative-biweekly, no

negative-weekly, and no negative-biweekly feedback.

Second Order Interaction in Analysis of Covariance in Task Assistance

Hypothesis 7 stated that there is no interaction between positive, negative, and frequencies of feedback in producing change in principals' behavior as perceived by teachers. The F ratio was .146 for positive, negative, and frequencies of feedback interaction, which is not significant at the .05 level. Consequently, the data supported the hypothesis. There was no interaction between positive, negative, and frequencies of feedback in producing change in principals' behavior as perceived by teachers.

Main Effects in the Analysis of Covariance for Personal Support

Hypothesis 1 stated that positive feedback produces no difference in principals' behavior as perceived by teachers as compared with no positive feedback. The F ratio was 14.751 for the positive main effect, which is significant at the .05 level. The combined adjusted means for positive-no positive feedback showed that no positive feedback produced a larger mean than positive feedback. Therefore, the data did not support the hypothesis. No positive feedback did produce a difference in principals' behavior as perceived by teachers than positive feedback.

Hypothesis 2 suggested that negative feedback produces a difference in principals' behavior as perceived by teachers as compared with no negative feedback. The F ratio was 9.360 for the negative main effect, which is significant at the .05 level. The combined adjusted

means for negative-no negative feedback on personal support of teachers, indicated a larger mean for negative feedback than no negative feedback. As a result, the data supported the hypothesis. Negative feedback did produce a difference in principals' behavior as perceived by teachers as compared to no negative feedback.

Hypothesis 3 stated that weekly feedback produces a difference in principals' behavior as perceived by teachers as compared with biweekly feedback. The F ratio was 14.111 for the frequency main effect, which is significant at the .05 level. The combined adjusted means for weekly and biweekly feedback, showed a larger mean for weekly feedback than biweekly feedback. Consequently, the data supported the hypothesis. Weekly feedback did produce a difference in principals' behavior as perceived by teachers as compared with biweekly feedback.

First Order Interaction in Analysis of Covariance for Personal Support

Hypothesis 4 suggested that there is an interaction between positive and negative feedback over frequencies in producing change in principals' behavior as perceived by teachers. The F ratio was 9.480 for the positive and negative feedback interaction, which is significant at the .05 level. The combined adjusted means for positive-negative feedback demonstrated that the condition of no positive-negative feedback produced the largest mean. Therefore, the data supported the hypothesis. The combined adjusted means showed that no positive-negative interaction resulted in a change in principals' behavior as perceived by teachers, which exceeded change produced in the other treatment groups and in the control group.

Hypothesis 5 stated that there is no interaction between positive and frequencies of feedback over negative feedback conditions in producing change in principals' behavior as perceived by teachers. The F ratio was 1.296 for the positive-frequencies of feedback interaction, which is not significant at the .05 level. As a result, the data supported the hypothesis. There was no interaction between positive-frequencies of feedback in producing change in principals' behavior as perceived by teachers.

Hypothesis 6 suggested that there is an interaction between negative and frequencies of feedback over positive feedback conditions in producing change in principals' behavior as perceived by teachers. The F ratio was 8.591 for the negative-frequencies of feedback interaction, which is significant at the .05 level. The combined adjusted means for negative-frequencies of feedback demonstrated that the condition of negative-weekly feedback produced the largest mean. Consequently, the data supported the hypothesis. The combined adjusted means showed that negative-weekly interaction resulted in a change in principals' behavior as perceived by teachers, which exceeded change produced by negative-biweekly, no negative-weekly, and no negative-biweekly feedback.

Second Order Interaction in Analysis of Covariance for Personal Support

Hypothesis 7 stated that there is no interaction between positive, negative, and frequencies of feedback in producing change in principals' behavior as perceived by teachers. The F ratio was 3.795 for positive, negative, and frequencies of feedback interaction, which is not significant

at the .05 level. Therefore, the data supported the hypothesis. There was no interaction between positive, negative, and frequencies of feedback in producing change in principals' behavior as perceived by teachers.

Conclusions

This study sought the answer to four questions regarding the effects of feedback on principals' behavior as perceived by teachers. To obtain answers to these questions seven hypotheses were tested which concerned the effects of positive-negative, and frequency of feedback on principals' behavior in the areas of task assistance and personal support. The data analyses provided full support for six of the hypotheses and partial support for the seventh.

On the basis of these findings it can be concluded that feedback does affect principals' behavior as perceived by teachers. In all instances, with the exception of "positive only" feedback for task assistance, there were either differences or changes in the principals' behavior which were in excess of differences or changes in the control group.

There were three specific questions raised. First, did the frequency of feedback affect the degree or amount of change in principals' behavior? The results of this study indicated that weekly feedback produced more change in principals' behavior than biweekly feedback. Second, did the quality (positive or negative) of feedback affect the degree or amount of change in principals' behavior? The findings of this study

demonstrated that positive feedback was not effective in producing change in principals' behavior as perceived by teachers; while negative feedback was effective in producing change in principals' behavior. It was also shown that the interaction condition of no positive-negative feedback was effective in producing change in principals' behavior as perceived by teachers. Lastly, what was the interaction between the frequency and quality of feedback? This study has shown that the interaction of positive-frequencies of feedback was not effective in producing change in principals' behavior as perceived by teachers; while the interaction condition of negative-weekly feedback was effective in producing change in principals' behavior. The study also showed that the interaction between positive, negative, and frequencies of feedback was not effective in producing change in principals' behavior as perceived by teachers. From the results of the study, negative weekly feedback in the absence of positive feedback, is the most effective means of producing change in principals' behavior as perceived by teachers.

C. Implications Drawn From Research

The results of this study indicated that negative weekly feedback, in the absence of positive feedback, is the most effective means of producing change in principals' behavior as perceived by teachers. This study calls into doubt those theorists who would suggest positive feedback or a combination of positive and negative feedback as being an effective means of producing change in behavior.

This study has practical implications for schools, since institutions may want to incorporate some mechanisms for negative weekly feedback into their communication network. Negative weekly feedback, as an important function of communication, may be of value in strengthening the organization's management and for producing a better teacher-principal relationship.

The use of negative weekly feedback may be used in three vital areas to aid the principal's administration. In the first place, receiving negative weekly feedback may be of importance to the principal, since by means of this type of feedback, attitudes and feelings are able to be transmitted to the principal and forewarn the principal of conflict and possible failure of desired projects. Second, negative weekly feedback may also aid the principal in obtaining viewpoints from teachers that differ from the ideas the principal has proposed and suggest ideas that the principal might not otherwise consider. Finally, after a directive has been given, the principal may allow negative weekly feedback to be used as a vehicle for the teachers to express their lack of understanding and need for more clarification. By allowing teachers the freedom to express negative weekly feedback, the principal may be able to establish or improve interpersonal relationships with the faculty and thus develop an atmosphere of trust and openness.

There are at least three areas of concern for teachers in which negative weekly feedback may be utilized in fostering better teacher-principal relations. The first area of concern that negative weekly feedback from teachers to principals may treat is to satisfy a basic human

need, which is the recognition of one's personal worth. Teachers view themselves as having inherent worth as great as that of the principal. This sense of personal worth may be injured when teachers are told to do something by the principal without being given an opportunity to express their reaction to directives or to suggest alternate proposals. Next, the release of emotional tension and pressures may find an outlet in encouraging teachers to express the negative things that they viewed concerning the principal's administration. The principal may also be able to identify the failures and sore spots that caused the problems that the teachers expressed. Finally, a principal may find that by not allowing teachers to give negative weekly feedback that he is building an authoritarian structure in those areas where the teachers' comments would be beneficial to the school's administration.

D. Recommendations for Further Research

This study examined the use of differential effects of feedback, namely, positive, negative, and frequency of feedback in producing change in a principals' behavior as perceived by teachers. The data upon which this research was based were obtained from teachers in the Cleveland Catholic School System. The population was 189 schools from which was drawn a sample of 40 schools.

Further research is suggested with regard to replicating the study in a public school system, or other organizational settings, to determine whether the results were peculiar to a parochial school system or whether they are more general.

Another area of research may be to investigate the lay teachers' and the religious teachers' perceptions in order to determine whether lay teachers' perceptions are the same as or different from religious teachers' perceptions. The perceptions of religious teachers may be influenced by their loyalties to their religious communities and hence, may be less objective.

This study did not consider the possibility of negative feedback being a depressing factor. There seemed to be indications from the reactions of principals who received negative feedback in the study that negative feedback was a depressing element. More research is needed to determine the degree, if any, that negative feedback produces depression.

Another consideration for further research may be the effects differential feedback has on a principal's administrative style. This may be of interest in determining if a task-oriented principal becomes more or less task oriented or remains the same as a result of feedback and, or if a human relations oriented principal becomes more or less human relations oriented or remains the same as a result of differential feedback.

APPENDIX A

STATEMENTS CONCERNING PRINCIPALS' BEHAVIOR

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Directions: Please check correct response to the following statements.

1. Encourages teachers to develop their own best teaching methods.

Never ____
Sometimes ____
Usually ____
Most Often ____
Always ____

2. Makes school policy decisions on (his/her) own.

Never ____
Sometimes ____
Usually ____
Most Often ____
Always ____

3. Handles behavior problems which affect teachers' classrooms by (himself/herself).

Never ____
Sometimes ____
Usually ____
Most Often ____
Always ____

4. Treats teachers with respect and courtesy.

Never ____
Sometimes ____
Usually ____
Most Often ____
Always ____

5. Concerns (himself/herself) solely with administrative duties.

Never ____
Sometimes ____
Usually ____
Most Often ____
Always ____

6. Introduces innovations into the school on (his/her) own initiative.

Never ____
Sometimes ____
Usually ____
Most Often ____
Always ____

7. Enforces rules of student behavior to the best interest of those concerned.

Never ____
Sometimes ____
Usually ____
Most Often ____
Always ____

8. Considers administrative duties of utmost importance.

Never ____
Sometimes ____
Usually ____
Most Often ____
Always ____

9. Keeps useful information on teaching techniques and methods of value to (himself/herself).

Never ____
Sometimes ____
Usually ____
Most Often ____
Always ____

10. Gives teachers a feeling of support in front of pupils and other teachers.

Never ____
Sometimes ____
Usually ____
Most Often ____
Always ____

11. Gives worthwhile suggestions for improving classroom instruction.

Never ____
Sometimes ____
Usually ____
Most Often ____
Always ____

12. Respects teachers' authority regarding pupils' grades.

Never ____
Sometimes ____
Usually ____
Most Often ____
Always ____

APPENDIX B

TABLES REGARDING HOMOGENEITY OF REGRESSION

TEST FOR TASK ASSISTANCE

AND

PERSONAL SUPPORT

APPENDIX B TABLE 1

HOMOGENEITY OF REGRESSION TEST OF TASK ASSISTANCE

Source	DF	SS	MS	F	Probability
Among slopes	7	11.2843	1.6120	1.4951	.2163
Deviations	24	25.8767	1.0782		
Total	31	37.1610			

APPENDIX B TABLE 2

HOMOGENEITY OF REGRESSION TEST OF PERSONAL SUPPORT

Source	DF	SS	MS	F	Probability
Among slopes	7	7.5739	1.0820	1.1949	.3430
Deviations	24	21.7329	.9055		
Total	31	29.3068			

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